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Exploring The Attitudes Of Criminal Justice And Homeland Security Students Regarding Assessment Techniques In Online Courses

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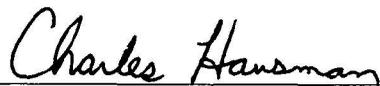
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EXPLORING THE ATTITUDES OF CRIMINAL JUSTICE STUDENTS
REGARDING ASSESSMENT TECHNIQUES IN ONLINE COURSES

By
Terry Allen Taylor

Ed.D. Educational Leadership and Policy Studies

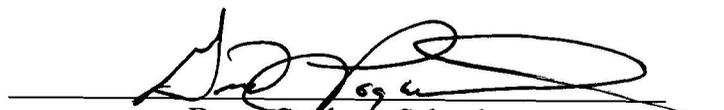
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EXPLORING THE ATTITUDES OF CRIMINAL
JUSTICE AND HOMELAND SECURITY STUDENTS REGARDING
ASSESSMENT TECHNIQUES IN ONLINE COURSES

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DEDICATION

First and foremost, I want to dedicate this work to my Lord and Savior Jesus Christ who, without him, I would be nothing. Next, I dedicate this work to my wife, Theia Ann Taylor. God blessed me with you and your love, support, and strength during my doctoral work at Eastern Kentucky University have meant everything to me. Finally, I dedicate this dissertation to my son, Mark Tallen Taylor, who I hope to see achieve all opportunities of life, liberty, and the pursuit of happiness. Theia and Mark Tallen, you guys are my reasons for working so diligently on this project.

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My family has provided encouragement in my life and career over the years as I have pursued additional levels of higher education. My mom, Shelia Taylor, has been a role model in how she has lived her life, through good times and bad. My dad, Cary Taylor, worked hard to provide me the opportunity to pursue my college dreams. He was truly the dad he didn't have to be. I would like again to acknowledge my wife, Theia Taylor, who is the glue that binds our family together and strength behind me.

Finally, I would like to acknowledge Dusty Grubb, Brandon Hibbard, and Linda Floyd; my three primary cohort members who were with me in each class along the way. I became a much better student by having you as classmates.

ABSTRACT

Substantial increases in online education since the start of the 21st century require investigation on how online courses differ from traditional face-to-face courses. It is particularly important to discover how online students learn and which assessment methods they prefer and see as most beneficial to online learning. Using online assessment techniques that correspond with those rated highly by online students can lead to better student experiences in online courses and improved persistence rates in online courses, which have traditionally been lower compared to face-to-face courses.

The participants in the study included online students majoring in Bachelor of Science degree programs in Criminal Justice, Police Studies, Homeland Security, and Correctional and Juvenile Justice Studies within the College of Justice and Safety at Eastern Kentucky University. This quantitative study examined these online students' attitudes toward fifteen assessment techniques commonly used in online courses. The study participants were asked to complete an online survey on which they rated each assessment technique from 1 to 6 based on their personal preference for the technique and the learning value of each technique. The mean ratings were rank ordered. Next, a series of paired-samples t-tests were conducted comparing the mean ratings of each assessment technique's personal preference to its corresponding learning value mean rating. Finally, bivariate correlations were run to assess the relationships between personal preference for and learning value of each assessment technique.

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LIST OF ACRONYMS

EKU	Eastern Kentucky University
IRB	Institutional Review Board
LEAA	Law Enforcement Assistance Administration
LEEP	Law Enforcement Educational Program
LV	Learning Value
MOOC	Massive Open Online Course
PP	Personal Preference

CHAPTER 1: INTRODUCTION

Online education offers advantages and opportunities for colleges and universities and their students, particularly those students living in remote areas who would not have otherwise had access to college (Gaytan, 2007; Revels & Ciampa, 2012). With most college courses now available online and on-campus, the geographical monopolies and barriers that sustained many colleges and universities for years have weakened (Hiltz & Turoff, 2005). Online education has grown quickly during the twenty-first century (Prineas & Cini, 2011) with many colleges and universities now offering criminal justice courses and degree programs online (Snell & Penn, 2005). The primary benefit of online education is that it offers students the convenience of learning anywhere they choose via computers and the Internet (Abarashi, 2011).

Allen and Seaman (2014) reported that student enrollment in at least one online college course increased from 1.6 million in Fall 2002 to 7.1 million in Fall 2012. This represented more than a four-fold increase in the number of students enrolled in at least one online course during this period. Over that same time period, the percentage of all students enrolled in at least one online course increased more than three-fold reaching an all-time high of 33.5% in Fall 2012. With such dramatic increases in the number of college students taking online courses, it is important to discover how online students learn and which assessment methods they prefer and see as most beneficial to learning in an online environment.

Assessment is a vital component of teaching and learning systems (Beebe, Vonderwell, & Boboc, 2010). Historically, assessment has been related to the concepts of

exams, grades, reports, and standards (Bartley, 2006). However, online education has different elements compared to traditional on-campus courses and online faculty cannot simply transfer the assessments used in their traditional, on-campus courses over to their online courses. Simonson (2000) suggests employing online technologies to make online courses different yet equivalent in terms of the learning objectives of traditional courses. When teaching online courses, it is crucial for faculty to consider the role technology plays in student learning and then integrate assessment techniques that best enhance teaching and learning (Bartley, 2006; Beebe et al., 2010).

Background of the Study

After teaching online criminal justice courses for over six years, the researcher realized that various forms of online assessment affect each student differently. Some students performed better with one form of assessment and worse with another. When integrating some common online assessments into hybrid criminal justice courses, this researcher was able to converse with students weekly and obtain informal feedback from them regarding the various online assessments during our face-to-face class meetings. These conversations revealed that students liked and found learning value in certain assessment techniques but not others. Additionally, students indicated that in some cases they liked certain assessment techniques, but did not feel they learned a lot from those assessment techniques, and vice versa.

Most online education research reports the findings of educational experts and provides their recommendations regarding best practices in online learning, course design, and student assessment. Instead of studying online assessment from the viewpoint of educational experts, this study examined online assessment by surveying

online criminal justice students' attitudes about fifteen commonly used online assessment techniques. The students ranked the assessment techniques based on their personal reference for and the learning value of each assessment technique.

History of Online Education

The Internet has propelled distance learning into the forefront of twenty-first century education in the form of online education (Snell & Penn, 2005). Online education is the current manifestation in a long line of distance education programs (Hirschheim, 2005). Current technology has broken down the boundaries of traditional educational institutions. Today anyone with a computer and an Internet connection can access higher education opportunities that were once only available to a limited few.

The worldwide history of distance education spans almost two centuries (Moore, Dickson-Deane & Galyen, 2011). In the United States, distance education dates back to early correspondence courses from the 1880's. According to Moore and Kearsley (2012, p. 24) technology has changed distance learning over the years. They group distance learning into five generations including 1. Correspondence, 2. Broadcast Radio and Television, 3. Open Universities, 4. Teleconferencing, and 5. Internet and the Worldwide Web. Nipper (1989) separated distance education into three generations that include First Generation: Correspondence Study, Second Generation: Multimedia Distance Education, and Third Generation: Computer-Mediated Distance Education. Nipper's three generations of distance education are tied to the development of production, distribution, and communication technology. Online education is the most recent form of social technology that enhances distance learning via the expansion, substitution, or merging of new educational methods and technologies (Hiltz & Turoff, 2005).

The technology of inexpensive and dependable postal services made the earliest form of distance education by mailed correspondence possible (Moore & Kearsley, 2012). First generation correspondence courses revolved around the use of printed course materials (Sumner, 2000). Chautauqua Correspondence College, founded in 1881 and later renamed Chautauqua College of Liberal Arts, was the first American college officially recognized to offer college correspondence courses (Moore & Kearsley, 2012; Nassah, 1997). The college was authorized by the state of New York to award college diplomas and degrees to correspondence students.

The Universities of Chicago, Wisconsin, and Kansas were also early institutions of higher education to become involved in learning by correspondence programs (Gaytan, 2007). Learning by correspondence was vital to The University of Chicago where students were allowed to complete up to thirty percent of their coursework through the mail. This allowed the university access to larger numbers of individuals they might not otherwise reach due to their age, gender, geographic location, or other demographic characteristics. These correspondence learning programs were closely scrutinized, and because most college faculty refused to teach the correspondence courses, they lingered in a secondary status at most institutions of higher education. In the correspondence courses feedback from learner to teacher and teacher to learner was often slow and infrequent, occurring primarily around the times learners submitted assignments to the teacher (Nipper, 1989).

Notwithstanding their secondary status at most colleges and universities, distance learning via correspondence continued growing throughout the mid-twentieth century (Dobbs, Waid & del Carmen, 2009). These mail correspondence courses were later

supplemented with broadcast media (Sumner, 2000) like television and radio (Kooi, 2008). Along with cassette tapes, the use broadcast media to supplement printed correspondence materials made up the second generation of distance education. These technological advances led to a change in the name from the first generation “correspondence courses” to the second generation term “distance education” (Sumner, 2000). While slow and infrequent student feedback remained a part of second generation distance education, these courses did include some telephone counseling and face-to-face tutorials (Nibber, 1989).

The establishment of single-mode, distance-teaching universities (Holmberg, 2003), like the British Open University and America’s Walden University, along with improved printed materials and student support services, ultimately helped second generation distance learning grow (Sumner, 2000). However, the single-mode, distance teaching universities remained trapped by having to rely on printed materials and one-way technologies like radio and television broadcasts, and audio and video cassettes. It was not until the 1990’s that institutions were finally able to add third generation distance learning technologies into courses and change how distance education was offered.

The 1990’s saw the implementation of third generation computer-mediated distance education that used improved two-way communication technologies. This increased interaction and feedback between learners and teachers and between the learners themselves (Nibber, 1989). Communication and interactivity, where learning becomes part of a social process, is a key component of third generation models of distance learning (Nibber, 1989; Sumner, 2000). The effective use of communication

technology has impacted the implementation and reputation of distance and online education in the past and will continue to impact it in the future.

In North America, traditional higher education initially treated online education as a means of enabling educational access with the latest technical media (Holmberg, 2003). Online education has since shifted from a minor supplemental role for learning by correspondence into a primary educational approach at most colleges and universities (Gaytan, 2007). The venture into online education was led by the University of Phoenix, which launched its online education programs in 1989 (Olson & Werhan, 2005). They have since developed a large student body of approximately 300,000 students by offering entire degree programs online (Harlin, 2013).

The passage of H.R. 609, the “College Access and Affordability Act,” in July 2006 also helped advance the growth of online education programs by loosening the 50% rule for distance education programs (Mentor, 2010). The new law entitled institutions to continue receiving federal financial aid while registering more than 50% of their students for distance education courses. For-profit institutions quickly took advantage of this law and now comprise a large percentage of the online learning market. Private, for-profit colleges and universities, like the University of Phoenix and ITT Tech, put the onus on public and private, non-profit colleges and universities to offer courses online or risk losing students to colleges and universities that did. This led many traditional colleges and universities to develop online education departments and increase the number of courses and degree programs they offered online.

Between 2008 and 2011, many universities experimented with the idea of Massive Open Online Courses (MOOCs), which came into the popular vernacular in

2012 (Sandeen, 2013). MOOCs are generally open to all learners at little to no cost. Although colleges and universities offer a certificate for completing these online courses, very few offer college credit. Additionally, while many MOOCs have thousands of learners enrolled in them, most have very low completions rates. The media continues to give far greater coverage and attention to MOOCs over the past few years relative to what their actual impact has been so far in higher education (Allen & Seaman, 2014). Data indicate that larger institutions of higher education (with 15,000 or more enrolled students) were more likely to have a MOOC in 2012 and 2013 compared to smaller institutions (with less than 3,000 enrolled students). The key to the long term sustainability of MOOCs will likely be mixing course openness and affordability with the granting of college credit in a way that is financially feasible for institutions of higher education.

History of Criminal Justice Education

Researchers generally agree that criminal justice education began in the 1960's when society started questioning its social and justice institutions (Stocker, Griffin, & Kocher, 2011). This led to significant growth in criminal justice education programs in the United States during the 1970's (Wimshurst & Allard, 2007). The Omnibus Crime Control and Safe Streets Act of 1968 created the Law Enforcement Assistance Administration (LEAA), which allowed federal funds to be transferred to state and local agencies for the Law Enforcement Educational Program (LEEP) (Stocker, Griffin, & Kocher, 2011). The creation of LEEP resulted in the increased development of criminal justice degree programs in higher education.

Online education has become a popular environment for many criminal justice programs. When questioning criminal justice students at two different institutions of higher education, Stocker, Griffin and Kocher (2011) reported that while 91% of the respondents either strongly or somewhat agreed that they preferred traditional classroom learning, 63.3% still strongly or somewhat agreed that they would engage in online learning while in college. Likewise, 71.4% of the respondents indicated that online education is an effective methodology of learning. Finally, 84.5% of respondents somewhat or strongly agreed that they were familiar with Blackboard or a similar learning management system.

Forms of Assessment

Assessment is an essential tool for significantly measuring what teachers are teaching and what students are learning (Mezeske & Mezeske, 2007). Stakes is quoted as saying, "When the cook tastes the soup, that's formative. When the guests taste the soup, that's summative (Scriven, 1991, p. 169)." Course assessment is differentiated by its objective or purpose and classified in terms of formative and summative assessment (Arend, 2007). Summative assessments evaluate final student learning while formative assessments use feedback and information to improve learning throughout the learning period. Modern assessment needs to move beyond simply requiring students to memorize facts because students have to be able to apply what they have learned in class and transfer it into practice in their long term professions (Mezeske & Mezeske, 2007). While there are some who view assessment as little more than a measure to prove something to an observer, assessment is essential for educators to measure the effectiveness of their instruction.

Formative Assessment

Formative assessment occurs throughout the learning process with feedback given during or following the administration of the assessment, and opportunities for self-improvement are often available to students (Bergstrom, Fryer & Norris, 2006).

Formative assessment often involves multiple discussion boards, one or two page written assessments, or multiple choice, true-false, or short answer quizzes administered at the end of a textbook chapter or learning unit. Online Formative assessments (1) provide formative and instant feedback to online students and faculty, (2) engage critical learning procedures, and (3) advance equitable education (Gikandi, Morrow, & Davis, 2011).

Formative assessments are embedded within online courses to monitor student learning so that the instructor can decide whether the online instruction should be maintained, modified, or ended (Oosterhof, Conrad, & Ely, 2008). Formative assessments help faculty determine what their students do and do not know by exposing gaps in student knowledge and allow them to modify course instruction after the quiz (Lahey, 2014). Additionally, formative assessments alert students to their particular learning gaps and allow them to reshape their own learning efforts regarding the information they missed. By exposing students to multiple low-stakes assessments designed to expose knowledge gaps and encourage continual course engagement, faculty can give students more ownership, power, and control over their own education.

Summative Assessment

Online summative assessments are high-stakes evaluations that measure whether or not students have met the desired learning goals or achieved a particular competency level at a fixed point in time like the end of an educational unit, the middle or end of an

online course, or after some other defined learning interval (Bergstrom, Fryer, & Norris, 2006; Gikandi et al., 2011, Lahey, 2014). Summative assessments in online courses often involve objective tests with uniform, pre-defined objectives and content that is broader and general in nature (Gikandi et al., 2011), often taking the form of mid-term exams, final exams, or comprehensive research projects (Oosterhof et al., 2008). Summative assessments are considered “high-stakes” because grades awarded to students from their assessment scores impact the students’ ability to progress in the course or degree program (Bergstrom, Fryer, & Norris, 2006; Gikandi et al., 2011). According Oosterhof et al. (2008), online summative assessments are suitable for certifying a learner’s final achievements. Unlike formative assessments, summative exams are not designed to shape future learning so little or no learning takes place as a result of the assessment (Lahey, 2014).

Statement of the Research Problem

Technology makes online education possible and gives online faculty the ability to track, assess, and react to student performance in online courses rapidly and completely (Prineas & Cini, 2011). Recent improvements in online education allow a variety of assessment techniques to be included in all educational activities. As the demand for online soared over the past decade, many researchers have shifted their research in order to understand the characteristics and perspectives of online learners (Kirby, Sharpe & Barbour, 2012). The purpose of this study was to determine how online criminal justice and homeland security students view fifteen online assessment techniques based on their personal preference for and the perceived learning value of each assessment technique. Online courses have higher attrition levels than face-to-face

courses taught on-campus; therefore, if educators know the assessment techniques online students prefer and learn from the most, they can use that information to potentially decrease attrition levels in online courses.

This study filled a gap in the literature by specifically focusing on criminal justice and homeland security students' viewpoints of online assessment and spotlighting their personal preference for and the perceived learning value of the assessment techniques they have encountered in their online courses. Additionally, this study assessed differences in and relationships between students' personal preference for and the learning value of each specific assessment technique. Most research in the area of online assessment involves faculty and educational experts' ideas regarding online assessment and best practices. Studies that investigate student attitudes about online assessment normally deal only with student satisfaction generally and do not specifically differentiate between student personal preference for and the perceived learning value of the online assessment techniques.

Purpose of the Study

One of the fastest growing methods for delivering college and university courses and degree programs is online using the Internet. In addition to the design of online courses and the supplemental materials provided to students, how students are assessed is vital to their ultimate performance and grades in online courses. The purpose of this study was to investigate the attitudes of online criminal justice students concerning the assessment techniques used in their online courses in order to improve the online learning experience for both online faculty and students. This study is specifically designed to

investigate a series of commonly used online assessment techniques to determine the students' personal preference for and the learning value of each assessment technique.

The study was quantitative and conducted an online survey taken by students majoring in five disciplines within the College of Justice and Safety at Eastern Kentucky University during the Spring 2014 semester. The five degree programs from which participants were invited to take the online survey included the Bachelor of Science Degree in Police Studies (Online and On-Campus), Bachelor of Science Degree in Correctional and Juvenile Justice Studies (Online), Bachelor of Science Degree in Criminal Justice (On-Campus), and Bachelor of Science Degree in Homeland Security (Online).

The survey respondents were asked to rate a list of fifteen online assessment techniques they have experienced in their online courses based on their personal preference for and their perceived learning value of each technique. If they had not experienced a particular assessment technique in their online courses, they were asked to select the "not applicable" option for that question so that it would not distort the survey data. However, the selection of "not applicable" did result in variation in the N value of the assessment techniques when computing their means. The respondents were also asked to order rank their top three assessment techniques based on personal preference and perceived learning value.

Students' mean ratings for personal preference and perceived learning value were calculated. The researcher then rank ordered the mean ratings in the personal preference category and the perceived learning value category in descending order. The personal preference and learning value categories were also rank ordered based on the total

number times they were selected by students' when listing their top three assessment techniques.

A series of paired-samples t-tests was then conducted in order to test for significant differences between the means of personal preference rating and learning value rating for each assessment technique. Finally, a series of bivariate correlations was conducted to determine the relationship between personal preference and learning value ratings for each assessment technique.

Significance of the Research

The goal of this research is to transform and improve instruction and assessment in online criminal justice and homeland security courses in the future. The data collected in this research study add to the knowledge base on online education assessment from the perspective of students. These data may benefit online criminal justice and homeland students by making assessments in future online courses more responsive to their preferences. Additionally, by knowing which assessment techniques online criminal justice and homeland security students prefer and perceive they learn the most from, colleges and universities can also develop better strategies to increase student persistence rates in online courses, which have traditionally been lower than student persistence in face-to-face courses. Because the online education community is so vast, the present research has the power to transform the online learning experience for all online students in the future.

Research Questions

The research questions for this study were as follows:

1. What are the student's mean ratings and rank order of their personal preference for each type of online assessment?
2. What are the student's mean ratings and rank order of perceived learning value for each type of online learning assessment?
3. Are there differences between student's ratings of their personal preference for and perceived learning value of various types of online assessments?
4. What is the relationship between student's personal preference for and perceived learning value of various types of online assessments?

Hypotheses

From the research questions the following null hypotheses emerged:

1. There are no significant differences between student's personal preference for and perceived learning value of various types of online assessments.
2. There are no significant relationships between student's personal preference for and perceived learning value of various types of online assessments.

Survey Design

This study attempted to shed light on student's attitudes towards online assessment. The sample included students enrolled in the online Bachelor's of Science Degree program in Police Studies, online Bachelor's of Science Degree program in Correctional and Juvenile Justice Studies, on-campus Bachelor's of Science Degree program in Criminal Justice, on-campus Bachelor's of Science Degree program in Police Studies, or online Bachelor's of Science Degree program in Homeland Security at

Eastern Kentucky University. The respondents rated fifteen online assessment techniques based on their personal preference for and the perceived learning.

The first page of the survey informed respondents about the research project and how to complete the survey. It also emphasized voluntary participation and their ability to opt out of taking the survey without penalty. The second page of the survey collected demographic data from the respondents that may be used in further research studies. The third page of the survey asked respondents to rate their personal preference for each of the fifteen online assessment techniques on a 6-point Likert scale, which was followed by asking the respondents to rank order the top three online assessment techniques they personally preferred. The fourth page of the survey asked respondents to rate the perceived learning value of each of the fifteen online assessment techniques on the same Likert scale and rank ordering the top three online assessment techniques they perceive provide the most learning value to them.

Concept Maps

The concept map in figure 1.1 illustrates research questions 1 and 2 in the study. Research question 1 assesses students' mean ratings and rank order of their personal preference for each type of online assessment. Research question 2 evaluates students' mean ratings and rank order of their perceived learning value for each type of online learning assessment.

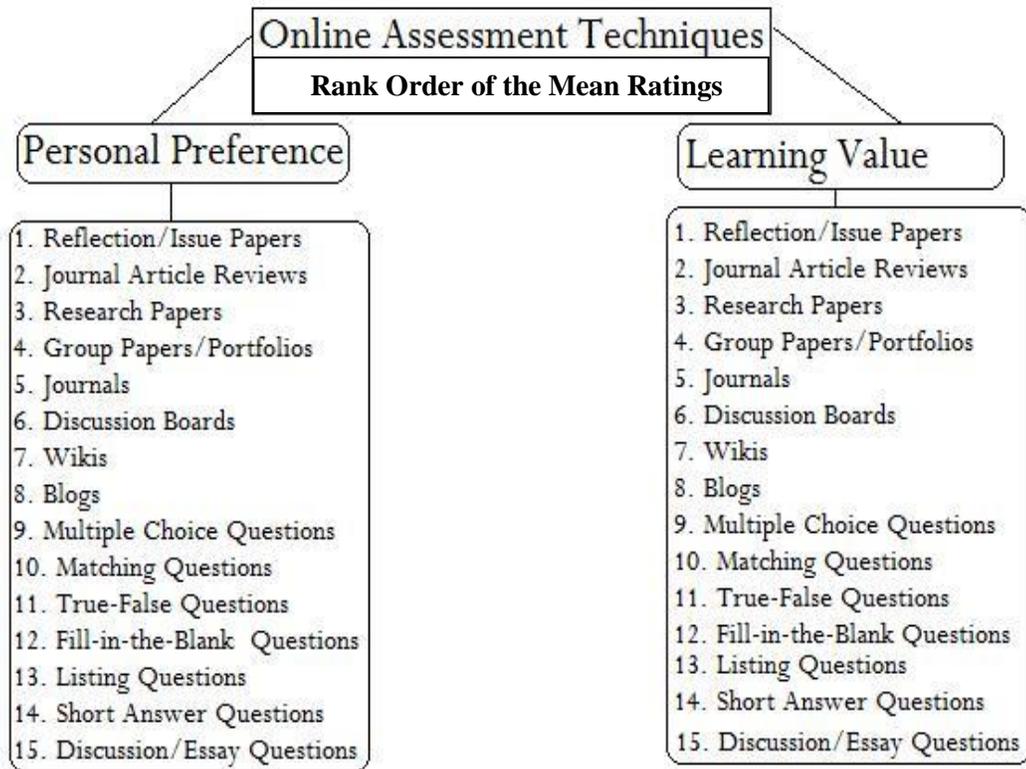


Figure 1.1. Online Assessment Techniques: Rank Order of the Mean Ratings of Personal Preference and Learning Value. (Research Questions 1 and 2)

The concept map in figure 1.2 illustrates research question 3 in the study.

Research question 3 seeks out significant differences between student's personal preference for and rating of the learning value of each of the fifteen online assessment techniques using paired-samples t-tests.

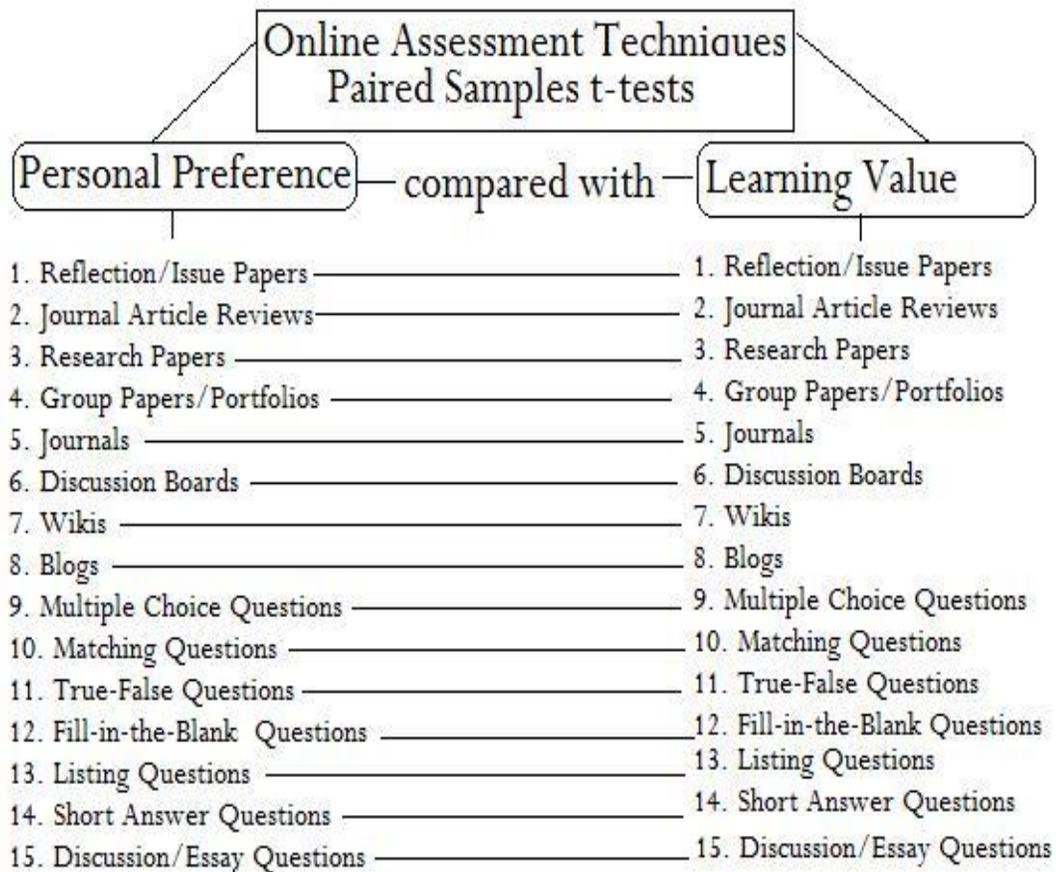


Figure 1.2. Online Assessment Techniques: Paired Samples t-test between Personal Preference and Learning Value. (Research Question 3).

The concept map in figure 1.3 illustrates research question 4 in the study. Research question 4 tests for significant relationships between student's personal preference for and rating of their perceived learning value of each of the fifteen online assessment techniques using bivariate correlations.

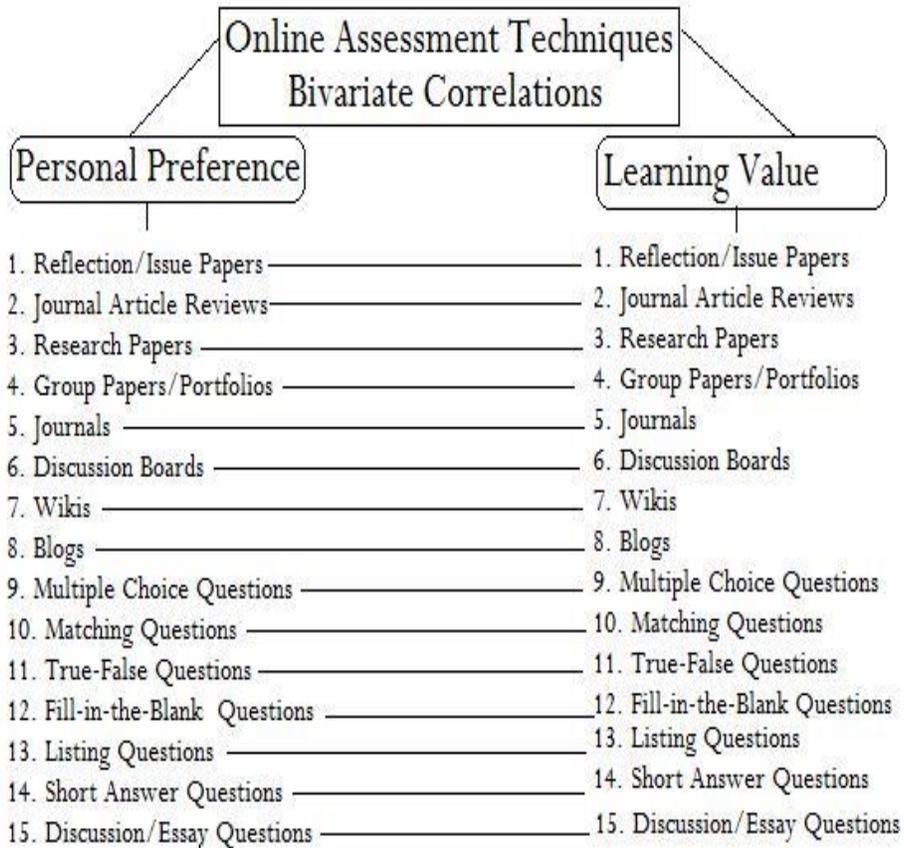


Figure 1.3. Online Assessment Techniques: Bivariate Correlations Between Personal Preference and Learning Value. (Research Question 4).

One of the most widely used learning management systems in online education is Blackboard (Stocker, Griffin, & Kocher, 2011). Upwards of 80% of all colleges and universities globally use Blackboard as the learning management system for their online courses. Figure 1.4 is a screen capture from the Blackboard learning management system showing the types of test questions available when taking online tests and quizzes. It is from this list that the researcher chose the seven styles of test questions that were included in the research survey.

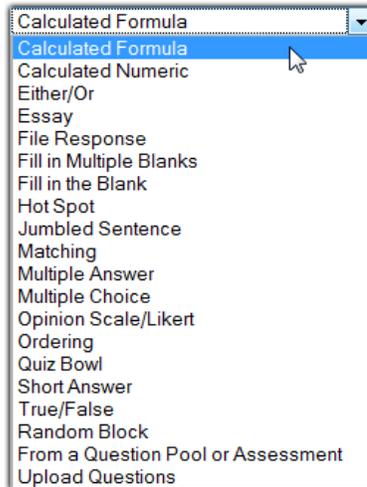


Figure 1.4. Types of Questions available in Blackboard for Test/Quizzes.

Source: Watwood, Nugent, & Deihl (2009, p. 109). *Online Teaching and Learning Resource Guide*. VCU Center for Teaching Excellence.

Limitations

Procedurally, one limitation of the study is that the findings were specific to a single university and particular group of students taking online courses in the online Bachelor's of Science Degree program in Police Studies, online Bachelor's of Science Degree program in Correctional and Juvenile Justice Studies, on-campus Bachelor's of Science Degree program in Criminal Justice, on-campus Bachelor's of Science Degree program in Police Studies, or online Bachelor's of Science Degree program in Homeland Security. The study only collected data from undergraduate students and not from graduate students. The data collected in this study was collected on a voluntary basis and the respondents are anonymous. The participants selected for the study were not a random sample therefore the results of the study of cannot be generalized to other student populations (Jackson, 2009, p. 16). Because the students were invited to participate by email, the response rate for the survey was low and may not be representative of the overall group of students invited to participate in the survey. Additionally, the study also

did not address the effectiveness of faculty in the online courses concerning their communication with, monitoring of, and feedback to students.

Regarding content, the online survey was developed by the researcher and limited to the fifteen online assessment techniques chosen by the researcher. The wording of the survey questions may have also been difficult for some students to understand or may have biased the respondents' answers (Jackson, 2009, p. 16). The research survey was reviewed and feedback given by faculty in the department of Educational Leadership in the College of Education at Eastern Kentucky University prior to implementation of the survey. The faculty helped determine the comprehensiveness and proper wording of the survey questions, evaluate its reliability and validity, and assure the effectiveness of the statistical and analytical procedures used. While the survey collected data based on demographics to determine the typical student in the sample, the data reported in the study did not specifically analyze the survey data based on student demographic categories. Finally, the research study was quantitative and did not explore the deeper qualitative reasons regarding why the respondents rated the assessment techniques the way they did in the survey.

Definition of Terms

Assessment: The systematic gathering, analysis and interpretation of information about learners for the purposes of making temporary decisions about instruction and improving student knowledge, learning and development (Harris & Hodges, 1995; Palomba & Banta, 1999; Poe & Stassen, 2013,).

Asynchronous Learning: Asynchronous learning is a style of online learning where learners participate and cover course content based on their own personal availability. All

learners are not required to meet and participate in the learning activity together at a predetermined time. (Bach, Haynes, & Smith, 2007).

Blog: Online web logs where course materials are posted as a chronological journal where no editing is allowed by others – although they are free to comment or respond to the blog (Palloff & Pratt, 2009).

Community Corrections: A correctional subfield where criminal offenders are supervised and provided services in the community instead of in a prison or jail (Bohm & Haley, 2010). Community corrections include programs like diversion, probation, parole, restitution, and halfway houses.

Criminal Justice: The academic study of crime and justice as it relates to law enforcement, the courts, and corrections working together to apprehend, prosecute, and control criminal offenders (Siegel & Worrall, 2013).

Criminal Justice Degree: In this study means a bachelors degree in criminal justice generally or, including but not limited to, degrees that specifically concentrate in community corrections, criminology, homeland security, institutional corrections, juvenile justice, law enforcement, or police studies.

Criminology: The scientific study of the causes, prevention, and correction of crime (Ward and Webb, 1984). Criminology has traditionally been viewed as a specialization within the broader discipline of sociology (Cohn, Farrington, & Wright, 1998).

Distance Education: “Provides an environment where the teacher and the learner are physically separated and utilize a technological-based delivery system involving print, audio, video, and/or computer networking to allow for communication and exchange of course content” (Kooi, 2008). Because instruction normally occurs in a different place

from learning, distance education requires communication through technologies (Moore & Kearsley, 2012).

Essay/Discussion Questions: A type of constructed-response test/quiz question that asks learners to provide written narrative answers to the test questions (Oosterhof et al., 2008).

Formative Assessment: Monitoring student learning by gathering and providing feedback and information that can be used by both the instructor and their students to improve student learning while the learning is taking place. Formative assessments are often low stakes, having little or no point value, and are intended to give students feedback on their strengths and weakness rather than assessing them for course grades (Lin & Lai, 2011; Suskie, 2004).

Institutional Corrections: A method of criminal corrections involving imprisonment in a prison or jail for a period of time as a means of protecting the public from further criminal activity by the offender (Bohm & Haley, 2010).

Internet: An interconnected system of worldwide computer networks using Transmission Control Protocol/Internet Protocol (TCP/IP) to connect computers and facilitate data transmission and exchange around the world. The Internet is a compilation of billions of interconnected web pages transferred using Hypertext Transfer Protocol (HTTP) that are collectively known as the World Wide Web.

Juvenile Delinquency: A sub-group of law violation involving persons who have not yet reached the age of 18 that was historically taken a rehabilitative approach in handling child offenders, rather than the punitive approach followed that is used in the adult criminal justice system (Hess & Orthmann, 2011).

Law Enforcement: Police agencies that uphold order, enforce the substantive criminal law, provide emergency services, keep automobile traffic moving, and develop a sense of community safety (Siegel & Worrall, 2013).

Learning Value (LV) Rating: How high the respondents rate an assessment technique based on how much the student learns from the assessment technique, regardless of how much that personally like the assessment technique.

Massive Open Online Course (MOOC): According to the Oxford Dictionaries Online a MOOC is “a course of study made available over the Internet without charge to a very large number of people (Kolowich, 2013).” Only a very small segment of higher education institutions are now experimenting with MOOCs with a somewhat larger number in the planning stages (Allen & Seaman, 2013).

Multiple-choice Questions: A type of fixed-choice test/quiz question consisting of a statement, called the stem, that explains a task that learners are to achieve, and a group of possible answers to the stem (Oosterhof et al., 2008,). Of the group of possible answers, only one answer is correct.

Objective Assessment: An assessment that has one correct answer, thus requiring faculty to use no professional judgment to score it correctly (Sukie, 2004)

Online Learning: Education delivered via the Internet that includes both synchronous and asynchronous interactions (Poe & Stassen, 2013).

Performance(Alternative) Assessments: Assessments where students demonstrate their skills by completing tasks like field experiences, laboratory assignments, projects, presentations, and term papers (Suskie, 2004).

Personal Preference (PP) Rating: How high the respondents rate an assessment technique based on how much they personally like the assessment technique, regardless of how much they learn from the assessment technique.

Quizzes: Assessments involving short, informal written examinations of students that are designed to determine students' knowledge, intelligence, or ability as they progress throughout a course. Quizzes are normally formative assessments and low stakes in nature.

Subjective Assessment: An assessment that may produce a wide variety of possible answers of differing quality and require faculty to use their professional judgment to grade (Suskie, 2004).

Summative Assessment: An evaluation of student learning or proficiency at a particular time, normally at the end of a specific educational unit or phase, by comparing it against a particular standard or criterion. Summative assessments are generally high stakes with regard to student grades and take place after the formal learning has concluded.

Tests: Assessments involving longer, formal written questions administered to students and designed to determine students' knowledge, intelligence, or ability, often as a mid-term or final examination. Tests that are summative assessments are often high stakes in nature, while formative assessments are low stakes (Suskie, 2004).

Traditional Assessments: Conventional assessments that have historically been completed in a controlled, timed examination setting, like objective, short answer, and essay tests (Suskie, 2004).

True-False (Either-Or) Questions: A type of fixed-choice test/quiz question consisting of a statement that learners are asked to classify it as being either true or false (Oosterhof et al., 2008).

Wiki: An online collaboration instrument that allows learners to communally add, remove, or edit most of the subject matter on a website (Oosterhof et al. 2008). These collaboratively created web pages are often assessed as a collaborative activity, using a rubric (Palloff & Pratt, 2009).

Summary

This study examines the attitudes of students majoring in the online Bachelor's of Science Degree program in Police Studies, online Bachelor's of Science Degree program in Correctional and Juvenile Justice Studies, on-campus Bachelor's of Science Degree program in Criminal Justice, on-campus Bachelor's of Science Degree program in Police Studies, or online Bachelor's of Science Degree program in Homeland Security at Eastern Kentucky University towards fifteen assessment techniques used in online courses. Student attitudes were surveyed regarding the assessment technique(s) they personally preferred and the assessment technique(s) they learned the most from. The research is important because it increased the knowledge base behind the development and use of quality online assessments. The objective of the research is important because it seeks to discover if there are assessment techniques that rank high for both personal preference and learning value. This can result in improved online assessment and a better overall learning experience for future online criminal justice students. A better online learning experience can also help reduce attrition rates in online education.

CHAPTER 2: LITERATURE REVIEW

Who Takes Courses Online

In the Sloan Consortium Study, Allen and Seaman (2006) reported that online learners were more apt to be older, non-traditional students with work and family responsibilities while the younger, traditional students were likely to prefer face-to-face courses. The study reported also widespread concurrence among college chief academic officers that online education largely provided educational access to non-traditional students who might not otherwise take face-to-face college courses because of work and family responsibilities. While these educational leaders thought that online education reached out to this new base of non-traditional students, there was also evidence that many educational leaders foresaw online education potentially serving large numbers of both traditional students and non-traditional students.

Scott (2011) reported 52% percent of California Community College students taking distance and online learning courses were 24 years old and under. The Scott (2011) report contrasted with the Allen and Seaman(2006), which suggested that the majority distance and online learners were older, non-traditional students. However, the two reports findings may have simply reflected the realities at time each study was released. As more courses have gone online since the release of the Allen and Seaman report in 2006, so have the number of younger, traditional students who are taking them.

Yu, Digangi, Jannasch-Pennell and Kaprolet (2008) reported the tendency for students under 23 years old to take online courses was stronger than for students 23 years old and older. This report seemed to support the notion that while most early online students were older, non-traditional students, today's online students are becoming

younger and more tech-savvy. Finally, a study by Mann and Henneberry (2012) suggested that while nontraditional students continue taking the overall majority of all credit hours in online education, traditional college students are increasingly likely to include at least one online course in their overall curriculum. The study attributed the increased number of traditional students taking online courses to their acceptance of online learning and comfort utilizing the technology that delivers online courses.

Why Students Take Courses Online

Bambara, Harbour, Davies, and Athey (2009) reported that many community college students are attracted to online courses because of work and family obligation that limit their ability to attend on-campus courses. Students with full-time jobs, jobs with various schedules, and the parents of small children preferred taking online courses. Some students took online courses as a means of increasing their class schedules, while others simply wanted to reduce amount of money they spent on fuel commuting to and from campus for on-campus courses.

A study by Radford (2011) reported that full-time workers were most likely to take at least one college course online when compared to students working part-time and those without jobs. Specifically 27% of undergraduate college students who worked full-time took at least one online course, compared to 17% for students working part-time and 16% for student who were not working. The report also showed that undergraduate college students with at least one dependent were more likely to take at least one online course compared to students with no dependents. Specifically 29% of undergraduate college students with one or more dependents took at least one online course, compare to 18% for students with no dependents.

Harris and Martin (2012) reported that the ability to fit college courses into their work schedule, convenience, access, and flexibility were the reasons college students at Eastern Oregon University enrolled in online courses and degree programs. The students taking at least one online course cited convenience (62%), long driving distance to campus (51%), work obligations (45%), and family obligations (45%) as their primary reasons for taking online courses. Fewer students participating in the survey selected lack of an available face to face course available or learning preference as a primary reason they took online courses.

Consistent with the idea that work obligations are related to reasons students take online courses, Stewart, Bachman, and Johnson (2010) reported that when it comes to the number of hours worked each week, students working between 21 and 40 hours were more motivated to take and finish their online degrees when compared to students working 20 or fewer hours per week and those working 41 or more hours per week. Students with children were parents also more motivated to complete an online degree than students who were not parents. This was attributed to the time limitations placed on them by their obligations at work and home.

Scott (2011) reported that more than 37% of California Community College students cited their work schedules as the reason they took online courses, while another 19% reported personal situations, like family and health, as the reason they took online courses. Only 7.7% cited a face-to-face course conflict and 6% that they'd have a prior positive experience in an online course as the reason they took online courses.

Pastore and Carr-Chellman (2009) surveyed online students at Pennsylvania State University who took online courses. They found that 88% of the respondents agreed or

strongly agreed that online courses allowed flexibility with their work requirements. Additionally, 58 % of the student respondents agreed or strongly agree that online courses worked well for their family obligations. Finally, over 60% of the students surveyed agreed or strongly agreed that they took online courses because of the general flexibility and convenience they offered.

A study by Mann and Henneberry (2012) revealed that as online college courses gain popularity and acceptance, the overall number of online courses offered has increased. They studied a wide assortment of student characteristics that influence the likelihood of their selecting online courses and indicated the reason more recent college students elected to take courses online went beyond family, and social obligations. While the study doesn't discount work and family obligations of earlier studies, a new finding of interest in this study was a significant and positive relationship between student comfort using web 2.0 technologies, such as social networking and live video conferencing, and the likelihood a student will elect to take online courses. The research pointed to a new direction regarding why traditional college students are increasingly choosing online courses that was outside of the family and social obligations of previous studies.

As tech-savvy millennials become college students, it is not surprising to observe an increase in the percentage of younger, traditional students taking online courses because of their comfort and flexibility. While younger, traditional students are now more likely to take at least one online course during their college careers, the students who reported taking all or most of their college courses online still tend to be older, non-traditional students (Harris & Martin, 2012).

Why Consider Students Attitudes of Assessment

Student reality cannot be ignored when trying to fully understand student learning (Struyven, Dochy, & Janssens, 2005). Student learning, in turn, is related to evaluation methods and assessment techniques. How student perceive assessment and evaluation techniques then influences their approaches to learning and studying. The assessment task, its context, the instructor, and the students' prior experiences substantially influence students' opinions of assessment and methods of learning. This provides the basis for the focus of the present research about student's opinions and attitudes about the assessment techniques used in online learning environments.

Stiggins (2007) contends that schools practice assessment for learning where students' thoughts and actions regarding assessment results are important. This is because students' reactions to their assessment results determines what they do in response. Students may respond productively or counterproductively depending on whether they understand the course work and feel like they can handle it or do not understand the course work and give up. While Stiggins' article argues that the thoughts and actions of child students are at least as important as those of their adult teachers, surely the thoughts and actions of students in higher education are equally important regarding how productive or counterproductive online assessment techniques are. Assessment for learning is designed to elicit productive responses to assessment results from students (Stiggins, 2007). Despite having high levels of validity and reliability, if an assessment causes students to give up because they have no idea what to do next then it is hard to say that it is a high quality assessment. Assessment for learning does not eliminate all

assessment failure, but rather tries to prevent failure from becoming chronic by offering students a chance for assessment success quickly and restoring their confidence.

Brown and Hirschfel (2009) researched students' conceptions of assessment and identified four major student concepts of assessment. Students conceived assessment as either improving achievement, a means for making them accountable, being irrelevant, and/or being enjoyable. Their research determined that it was possible to measure students' conceptions of assessment and that meaningful, non-chance correlations existed between the students' conceptions of assessment and their academic success. They suggested that students who focus on personal accountability regarding assessment, treat assessment seriously, pay attention to it, and reject blaming the school or teacher will achieve more.

Assessment

Assessment is the organized collection and analysis of information to advance student knowledge and learning (Poe & Stassen, 2013). It includes examining and evaluating student performance for grading purposes. Assessment is ongoing process of establishing clear, measurable outcomes of student learning and ensuring that students have sufficient opportunities to achieve those learning outcomes (Suskie, 2004). From there instructors must systematically gather, analyze, and interpret evidence to determine how well student learning matches faculty expectations, and then use the resulting information to understand and improve student learning.

Assessment has a significant influence on students' learning, which is closely related to the student's approach to learning (Struyven et al., 2005). How students approach studying and learning determines the way they handle assignments and

assessments. Thus students' evaluation and assessment experiences can influence how they perceive current and future learning. Instructors need to have clearly defined course objectives and consider the issues of content, context, and audience when deciding which assessment techniques are appropriate to use in their online courses (Dikli, 2003).

Le & Tam (2007) researched student viewpoints of the most effective assessment methods based on how they enhanced student attitudes and understanding. Of the eight assessment methods contained in the survey, the students felt that the problem-based assignment assessment methods were the most effective for both enhancing student attitudes. Open book final exams and mid-semester exams rated higher than closed-book final exams and mid-semester exams. Multiple-choice question tests exams ranked below open-book exams but above closed-book exams. Seminar and presentation were the lowest ranked assessment methods.

Faculty Feedback to Students

Productive feedback not only benefits students, but can also benefit faculty on their assessment reports when students tell them what they are doing well and what they can improve upon (Suskie, 2004). Test and quizzes based on multiple choice, true/false, and matching questions can be automatically graded and provide immediate feedback to students (Eggleston, 2011). This feedback regarding student performance allows students to know where they stand in relation to course learning goals (William, 2011), enables students to restructure their understanding and abilities, and then develop stronger ideas and capabilities that improve their future performance in the course (Brown & Knight, 1994, p. 15, Nicol & Macfarlane-Dick, 2004).

Theories of Online Learning and Assessment

Equivalency Theory

Michael Simonson's Equivalency Theory argues that when comparing the online learning environment to the face-to-face classroom it is important for online faculty to work to make the online classroom equivalent to – not equal to – the face-to-face classroom (Simonson, 2000). Achieving equivalency occurs by employing a diverse array of learning experiences and assessments that are adapted to the environment and situation online students find themselves in. Equivalency can be achieved through the selection of appropriate technologies of online instruction. This is accomplished by 1) assessing the available instructional technologies, 2) determining the learning outcomes, 3) identifying learning experiences and matching them to appropriate technologies available, and 4) preparing the learning experiences for online delivery. Ultimately, this theory revolves around the idea that the experiences of face-to-face learners and the online distant learners should have equivalent value, even if their experiences are different. While the concept of equivalency may be more difficult for online faculty than simply making an equal transfer of their face-to-face courses over to the online module, it promises to be more effective.

Constructivism

Constructivism is a theory about how people learn that asserts that people construct their perception and knowledge of the world by experiencing things and reflecting on those experiences (Third Ed Online, 2004). When we experience something new, we then compare it to what we already know and attempt to reconcile the old and new. The new information may ultimately convince us to change our beliefs or we may

simply reject the new information as irrelevant. Constructivist theory in online courses is best seen in interactive assessments like discussion boards, wikis, blogs, journals, group projects/portfolios, and other collaborative assessments. Online courses that incorporate constructivist theory require students to construct knowledge based on their previous experiences rather than engaging in the lower-order repetition of facts. This transforms students into “expert learners” and allows them to “learn how to learn.” In the end, constructivism is founded on the belief that reality is constructed during interaction with the environment and peers and that knowledge is both individual and communal (Vrasidas, 2000).

Objectivism

Many of the traditional approaches have dominated education for years are fundamentally objectivist (Vrasidas, 2000). The basis of objectivism is for faculty to transfer some objective knowledge into the student’s head. All students are expected to complete the same assignments, achieve the same objective, and be evaluated using the same objective assessment techniques. Assessment techniques of objectivism often include fixed response exam questions like multiple choice, matching, true/false, fill-in-the-blank, and listing. Ultimately, objectivism assumes that there is a real world and the reason for obtaining education is to record the things of that world on the learner's mind.

Connectivism

The starting point for learning in Connectivism is when knowledge is activated when a learner joins and contributes information into a learning community, which is part of a larger network (Kop & Hill, 2008). Knowledge is then disseminated across these larger information networks and amassed in a variety of digital formats. Because of the

shrinking half-life of information due to the speed with which it changes, the validity and accuracy of information can also change over time as new input are added to the subject matter.

The key to connectiveness is the ability to search for current information, while also being able to filter out less important and irrelevant information (Kop & Hill, 2008).

According to Siemens (2005) connectivism is based on the following principles:

- Learning and knowledge rests in diversity of opinions
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process (Siemens, 2005).

Connectivism relates online learning communities particularly when students chose what to learn and determine the meaning of incoming information through the lens of a constantly shifting reality (Siemens, 2005). Today's correct answer may be wrong tomorrow because alterations to the information climate influence the result. Siemens contends that "the ability to see connections between fields, ideas, and concepts is a core skill"

Formative and Summative Assessments

Almost all assessment techniques can be utilized for formative or summative ends (Brown & Knight, 1994). The terms formative and summative refer to the purpose of assessments rather than the particular assessment techniques. Whether for formative or summative ends, the assessment techniques employed by the instructor must be valued within the learning environment for which it is intended, and the purposes and skills being assessed must be taken into consideration (Struyven et al., 2005). Phillips and Lowe (2003) recommend that online courses to contain an array of formative and summative assessments that assess deep knowledge, make use of open book exams, and are related to the workplace.

Formative Assessment

Much like we would expect sports teams to practice before going out and winning games, we should also expect our online students to practice, using available online tools to master the course concepts, before taking and scoring well on summative exams (Watwood, Nugent & Deihi, 2009). Formative assessment describes the purpose of assessment, which involves obtaining an estimate of achievement which is then used to aid in the learning process (Brown & Knight, 1994). Formative assessment involves assessment for learning (Watwood et al, 2009) and centers around enhancing the quality of learning as opposed to simply collecting data to evaluate and grade students (Angelo & Cross, 1993).

Formative assessment is an essential component of online university courses and modern technology offers unprecedented opportunities for educators to provide quality formative assessment tasks when assessing students learning (Glassmeyer, Dibbs, &

Jensen, 2011). A primary element of formative assessment is the generation of feedback by the teacher or class peers that benefits the student and teacher (Nicol & Macfarane-Dick, 2004). Formative assessment also informs teachers about topics students are struggling with in class, shows them where to focus their instructional efforts (Nicol & Macfarane-Dick, 2004), and allows them to change what they are doing in response (William, 2011).

A concept related to formative assessment is that of diagnostic assessment, which discovers and isolates learner strengths and weaknesses (Bergstrom, Fryer & Norris, 2006). Diagnostic assessments can be used to recognize individual personality qualities or attributes or allow learners to personally gauge their ability to complete an assignment or exhibit knowledge in a specific area of learning. In online education, diagnostic assessments can take the form of simple discussions, practice quizzes, and written assessments that either count for extra credit or do not count towards the students' final course grade.

Summative Assessment

Summative assessment is assessment of learning (Watwood et al., 2009). Summative assessment determines what students have learned up to a certain point in the course. Dobson (2008) contended that when high-stakes summative assessments are used, formative quizzes can help increase scores on the summative exams. Dobson's study found that using online formative quizzes enhanced student performance on future summative exams in the course. The study also found a significant positive correlation ($r = 0.50$) between individual mean scores on the formative quizzes and that individual mean scores on the summative exams administered the course.

Traditional and Performance Assessments

Traditional Assessments

For many year student learning was only measured by traditional testing as the means of assessment (Dikli, 2003). The most commonly used traditional assessments include multiple-choice questions, true/false questions, short answer questions, and essay/discussion questions. Today educators realize that traditional testing methods of assessment are only one method of gather information about student learning and should only be used as one part of a broader concept of using multiple methods of assessment.

Performance Assessments

Performance assessments provide the benefits of traditional subjective assessment techniques while having the additional advantage of combining learning and assessment (Suskie, 2004). Students learn and demonstrate their skills while working on performance assessments, compared to traditional testing intervals where students often learn much less. Performance assessments normally contain the assignment or prompt telling students what is expected of them in the assignment and a scoring guide or rubric that will be used to evaluate their completed assignment.

Online Assessment

Online learning changes the characteristics of teaching and learning and the nature of effective assessment methods (Swan, Shen, & Hiltz, 2006). Early online education often employed summative forms of assessment, like exams and quizzes, to evaluate student learning (Watwood et al., 2009). Online assessment involves using the Internet to provide, evaluate, and report online assessment content and, when used properly, it can significantly greatly improve the efficacy of online education (Bergstrom,

Fryer & Norris, 2006). Assessing student learning in online courses is different than in face-to-face courses because students and instructors in online courses do not share physical proximity (Vonderwell & Boboc, 2013). According to Morgan and O'Reilly (2006) good online assessments should have the following traits: a clear rationale and consistent pedagogical approach; explicit values, aims, criteria, and standards; relevant authentic and holistic tasks; awareness of students' learning contexts and perceptions; adequate and timely formative feedback; a facilitative degree of structure; sufficient volume of assessment; validity and reliability; certifiable as the students' own work, and be subject to continuous improvement via evaluation and quality enhancement.

Assessment is not separate from learning (Swan et al., 2006). It not only guides and motivates learning, assessment can also be a part of collaborative learning and building community in an online course. Online learners often become active, reflective learners and both online students and teachers engage in learning using technology (Poe & Stassen, 2013). Since online learners often have fewer opportunities for the spontaneous, real time exchanges that occur in the courses, online instructors need to deliberately design their courses to support and facilitate online student interactions (Kelly, 2014).

No single assessment technique is right for all situations and online education gives faculty the opportunity for flexible and individualized assessments (Bartley, 2006). Maslow (1966, pp. 15 - 16) said "I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail." Using the right assessment technique is valuable much like using the right tool. Online faculty who over-use a particular assessment technique often do not take advantage of the modern assessment tools

available in online course management systems and may not be assessing their students in the best possible ways.

Paloff & Pratt (2009, p. 40) assert that “a variety of assessment techniques should be employed to effectively assess student performance in online courses.” Dikli (2003) also concluded that a mixture of conventional and alternative assessment is critical when assessing distance learners. Faculty can also examine their own courses to determine which assessment methods work and which do not work well with regards to student learning (Poe and Stassen, 2013). Depending on the type of instruction required in a course, a combination of conventional and alternative assessment techniques may benefit students (Dikli, 2003). Regardless of what is being assessed or how students are being assessed, good assessments should return useful, reasonably accurate, and truthful information about student performance (Suskie, 2004). Additionally, good assessments should also be fair to all students, systematized, cost effective, and ethical, while also protecting the privacy and dignity of the students involved.

Boyles (2011) surveyed 23 students taking a technology course in fall 2009 at an urban, Midwestern university regarding their perceptions of online assessment. Results from the sample respondents, made up of mostly female and non-traditional students, indicated that 95% preferred some form of online assessment, 91% agreed that online assessment enhanced their learning experiences, and 78% agreed that online assessment should be used in all classes.

Students perceived online assessment to be fair and acceptable and their performance with online assessments and tradition face-to-face paper assessments were similar (Escudier et al., 2011). Where there was an advantage it was found to be in the

online assessments, particularly with its flexibility in approach to answering and difficulty of cheating.

Hewson (2012) compared students' performance on summative assessments to their self-reported preferred and non-preferred assessment methods. The study showed student performance remained consistent regardless of whether the completed assessment was given in the preferred or non-preferred assessment method. This provided initial support for the validity of online assessment methods. Hewson goes on to suggest further investigating the impact of using preferred and non-preferred assessment methods upon the quality of the student experience.

Arend (2007) collected assessment data from sixty randomly surveyed courses during the Spring 2005 semester within the Colorado Community Colleges Online (CCSO) system in the areas of Accounting, Arts and Humanities, Business and Economics, Computer Information Systems, Criminal Justice, Early Childhood Education, Languages and Literatures, Math, Physical and Environmental Sciences, and Social and Behavioral Sciences. In the survey of 60 online courses, 59 courses utilized discussion assessments, 50 used test/exam assessments, and 38 employed written assignments. Quizzes and papers were each utilized in 13 of the courses and journals were used in 10 courses. None of the courses made use of group projects. The typical CCSO course in the study contained of 29 assignments, utilized five different assessment techniques, and assignments were due in at least 10 of the 15 weeks.

Online Assessment Techniques

Kearns (2012) conducted a review of 24 online syllabi at a large research university in the northeastern United States followed by qualitative faculty interviews.

The results showed that written assignments and online discussion were the two most popular methods of online assessment. The five most common assessment techniques used to assess online student learners in the study were writing assignments (including research papers, case study responses and short essays); online discussion (including asynchronous discussions in discussion boards, blogs , and wikis); fieldwork (a written assignments requiring students to collect data and write up a report); quizzes and exams (traditional assessments of multiple-choice or short answer questions), and presentations (student presentations in an adapted format due to the online environment).

Writing assessments were most frequently used appearing in 22 of the 24 course syllabi reviewed (Kearns, 2012). Discussion boards were another popular method of assessment having been used in 19 of the 24 course syllabi reviewed. Not only were these two assessment methods popular individually, but both were used together as assessment methods in 18 of the 24 courses reviewed. Field work was used in 9 of the courses, while only 8 courses used quizzes and exams for assessment. Finally, presentations were used in only 5 of the 24 courses.

These assessment techniques from the Kearns study seem to align with the Palmer and Holt (2008) survey of 1862 students from various Asian universities using a scale of 1 – 7. The survey found that submitting writing assignments online received higher scores for importance ($m = 5.79$) and satisfaction ($m = 5.20$) than the scores for completing online quizzes/tests for importance ($m = 4.90$) and satisfaction ($m = 4.34$).

A study by Gaytan and McEwen (2007) found that students considered self-assessments and practice test (19%) to be an effective assessment technique. This was followed by threaded discussions (10%), weekly assignments with immediate feedback

(7%), the use of rubrics (7%), and the use of portfolios/projects (7%). The student respondents offered additional recommendations to enhance online assessment: providing meaningful and timely instructor feedback (16%) and using a variety of assessment techniques (7%).

Writing Assessments

One major issue with using writing assignments to assess students is plagiarism. While incidents of plagiarism have risen in recent years, faculty can use plagiarism software tools, like SafeAssign in Blackboard, to discourage plagiarism (Watwood et al., 2009). While plagiarism detection tools may prevent most plagiarism, it is not fool proof and some students will still try to plagiarize their work.

Reflection/Issue Papers

Scouller (1998) surveyed 206 second-year Education students regarding their preference for an assignment essay paper or a multiple choice question examination. Overall, students expressed a great deal of preference for being assessed by an assignment essay paper in the Education II course over a multiple choice question examination by a 135 to 60 margin. Data was missing for 11 students. The research study showed that those students who preferred the assignment essay as the assessment method employed deeper learning strategies. They also reported deep motives when preparing their assignment essays and performed better in the assignment essays than those who preferred multiple choice question examinations. By contrast, students who preferred multiple choice question examinations employed surface level strategies when preparing their essays and were less successful in their performance on the assignment essays. The study indicated that the assignment essay is the better form of assessing students'

learning since it gives students with the chance to develop higher skill levels of thinking and learning when writing essays and to demonstrate these skills by the quality of the end product.

Group Papers/Portfolios

Group projects and portfolios are commonly used alternative or innovative assessment techniques that involve open-ended questions, exhibits, demonstrations, hands-on execution of experiments, computer simulations, or portfolio construction (Dikli, 2003). Innovative assessment techniques, like portfolios, have been introduced into higher education courses and have enhanced the 'conventional' assessment setting, previously characterized by multiple-choice examinations and essay evaluations (Struyven et al., 2005). A benefit to using portfolio assessments is that the process for developing portfolios and issues surrounding portfolios can be easily generalized to various educational levels and subject areas (Keeler, 1997).

Portfolios are purposeful and organized collections of students' work that demonstrate their skill, effort, progress, and achievement over time (Keeler, 1997; Robinson, 2000). Students further demonstrate their acquisition and understanding of the interrelatedness of these individual parts and how they contribute to the whole, based on a set of established performance criteria (Robinson, 2000). An electronic portfolio is a technology-based type of genuine student-based assessment that can contain an almost infinite amount and variety of information (Dikli, 2003). Whether part of a face-to-face or online course, the purpose of portfolio development is to display the outcomes of course learning in a manner that challenges faculty and students to focus on meaningful results (Keeler, 1997).

Robinson (2000) surveyed students taking computer applications courses and their replies supported the use of portfolio assessment as an effective alternative to traditional methods. The portfolio assessment method required the students to regularly revisit and reflect on their work, develop their cognitive skills, and think critically, all of which improved their overall performance in the course. Slater (1996) reported on students who produced portfolios as part of the class assessment. The research found that a number of students who produced portfolios felt as though they had internalized the materials, could apply the concepts creatively and broadly, and remembered what they had learned for a longer time after completing the portfolio assessment. This is likely because portfolios allow for a multifaceted learning experience over an extended period of time.

Brown and Hirschfel (2009) found student preferences for alternative assessment techniques, like portfolios, projects, self-assessments, peer-assessment, and other non-examination assessments, were rated higher by students because the alternative assessments were more authentic and made the learning experience stronger and more realistic. Projects and portfolios often possess authenticity, include the real life experiences of the students, and deal with real life issues (Dikli, 2003). Projects and portfolios can include any sort of learning approach that displays what students know about a topic. Students may be asked to use their problem solving skills to respond to a given situation. Finally, Dikli (2003) contends that projects and portfolios are effective assessment techniques when evaluating students over a period of time.

Alden (2011) investigated the question “How should individual team members in online courses be assessed for the extent and quality of their contributions to the group

project?” The research applied four commonly used grading techniques of Shared Grades, Records Review, Portfolio Review, and Peer Review. Portfolio Review and Records Review rated highest among respondents as being valid indicators of student performance in groups. Fewer respondents preferred Peer Review and very few supported basing the grade on a Shared Grade. The research ultimately suggested faculty reviewing records (Records Review) to be the best practice for online courses because of its overall cost-effectiveness. Interestingly students in the study had more confidence in the accuracy of Records Review than did the faculty.

Journals

Journals differ from discussion boards, wikis, and blogs because they allow students the opportunity for private student-faculty interactions (Eggleston, 2011). Journals enhance student-faculty communication, active learning, high expectations, different abilities, and time on task. Most individual journals are recorded over the semester to demonstrate various types of learning, including activities, assignments, course readings, and outside learning opportunities.

Interactive Assessments – Discussion Boards, Wikis, Blogs

Student conversation and interactivity are often a core learning goal in online courses and should be fostered in online courses (McIssac & Craft, 2003). When faculty include interactive learning into their instructional strategies they encourage higher order thinking, enhance student communication, improve student motivation, and increase student participation in their online courses (Hallas, 2008). Today’s generation of students is very comfortable, familiar and active with online social media like facebook, twitter, and Google Plus+ and use these forms of social media to write reflectively and

comment on their friends writings (Smith, Mills, & Meyers, 2008). Online discussions are educational extension of these forms of social media that permit students to engage in conversations with other students who are interested in and studying the same issues (Buluc, Costea, & Tomescu, 2013). Online discussions are a significant element of online education because they attempt to duplicate the discussions that occur in traditional, on-campus courses by developing standards regarding online discussions, peer collaboration, and the quantity and quality of discussion posts (Bartley, 2006).

Interactivity occurs between students and between student and teacher and includes discussion boards, blogs, wikis, chat rooms, or real time online video conferencing. Group chats that include both students and instructor can enhance and personalize the online learning experience so that it alleviates student isolation and makes them aware that they are being listened too by others (Steinman, 2007). Online faculty can design their online courses to ensure they are interactive by using assessment techniques that engage online students in the learning process. Wikis are a good method to allow students to develop the product and teachers to observe how students apply their skills (Palloff & Pratt, 2009). Regardless of the methods used, the goal is to promote effective interactive learning using the strengths of the online platform provided (McIssac & Craft, 2003). If discussions are well planned and properly moderated by the instructor, students can expect higher levels of participation and a positive exchange of intellectual ideas. Kelly (2014) suggests online instructors become active participants in the online discussions to help identify the purpose of the discussion, guide the discussion, foster dialogue, and make students think.

Online discussions allow instructors to assess what students both know and understand (Buluc et al., 2013). Therefore, online instructors should learn how to create effective online discussions and constantly enhance discussion assignments in order to improve student learning (Meyer, 2006). Online discussions should be assessed using specific criteria included in the course syllabus, a course announcement, or within the instructions of the discussion assignment (Hanover Research Council, 2009). Assessment of online discussions should take into account both the quantity and quality of students' posts and follow a specific rubric.

A rubric is a list, chart, or other guide that describes the criteria an instructor will use to score an assignment (Suskie, 2004). A well written rubric helps students understand the things the instructor is looking for when grading the assignment and can inspire better performance. This, in turn, makes scoring more accurate, consistent and unbiased, resulting in fewer arguments with students regarding their assignment grade. Rubrics also make grading the assignment simpler and faster, leaving more time for feedback and communication with students to help them understand their strengths and weaknesses.

Discussion Boards

Because discussion boards were one of the first tools available on course management systems, they are often overused and the prompts are not always developed at an appropriately high level. Discussion boards, also called threaded discussions, were one of the first tools available in online course management systems (Eggleston, 2011) and allow students to add to an online group discussion asynchronously (Meyer 2006). Students are able to log into the online course whatever time they like, read the posts of

their fellow students, and devise their own thoughts or ideas to include in the groups' discussion. When evaluating the quality of student work in an online discussion board assessment it is important to consider how the instructor sets up the discussion, the purpose of the evaluation, how and at what level an online discussion is initiated, how the instructor interacts in the discussion, and what grading rubric or framework is used.

Cummins (2013) conducted a ten question course satisfaction survey of online early childhood education students, ninety percent of whom were female. The results showed that 100% of the student indicated that discussion boards were effective in supporting their learning. Additionally, Vonderwell, Liang, and Alderman (2007) performed a case study exploring asynchronous online discussions, assessment processes, and student experiences in five online graduate courses in the colleges of education at two Midwestern universities. Their findings suggest that students value online discussions. Students reported that "most learning takes place" in well structured, asynchronous discussions. When not well structured, discussions restrict student learning. The findings also suggest that self-regulatory cognitional and activities were essential parts of the learning and assessment in online courses.

Xie, Durrington, and Yen (2011) investigated the relationship between the intrinsic motivation of online students and their level of participation in discussion boards. Their mixed methods research of 56 students tracked their motivation throughout the semester. At the beginning of the semester there was no correlation between the student's intrinsic motivation and their participation in online discussions. However, the correlation between students' intrinsic motivation and participation in online discussions became stronger and significant as the semester progressed and seemed to need time in

order for that relationship to develop. The results of the research suggests that students' perceptions of online discussions changed as the semester progressed to the point that students' began to perceive online discussions as enjoyable and valuable, resulting in increased participation.

Sebastianelli and Tamimi (2011) studied the use of multiple assessments in online business courses. They found from their analysis of student feedback in the online courses that learning features that involved instructor-student interaction were the most useful in learning quantitative content of the course. The instructor-student learning features that ranked highest were customized audio-video clips produced specifically by the instructor, graded assignments, and the ask-the-instructor forum. When learning in quantitative business courses, students perceived learning features that involve student-student interaction to be least effective. When it comes to quantitative materials, students want the faculty expert to direct and guide their learning. While Sebastianelli and Tamimi (2011) recommend utilizing discussion forums to connect with students and promote course interaction, they found limited value in their use and a disconnect between student involvement and achievement in discussion forums and grades on the final exam.

Wikis

Wikis are online collaborative and communication tools that allow students and faculty to engage with each other in learning by supplying and editing the materials on the web page collaboratively (Eggleston, 2011; Judd, Kennedy & Cropper, 2010; Parker & Chao, 2007; Watwood et al., 2009). Wikis are important Web 2.0 tools that are easy to use which makes them great for group projects that emphasizing collaboration and editing (Eggleston, 2011; Parker & Chao, 2007; Watwood et al., 2009). Wikis can be

powerful learning assessments because they provide the opportunity for student to express multiple viewpoints and ideas, and allow them to carry out a variety of project roles (Boettcher, 2011). While wikis are promoted as great online collaborative tools for students, their success or failure largely depend on how specific assignments and activities in the wiki are designed and implemented (Judd et al., 2010).

According to Duffy and Bruns (2006), wikis can be used in educational environments by 1) allowing students to use the wiki to develop research projects, with the wiki serving as ongoing documentation of their work, 2) allowing students to add summaries of their thoughts from the prescribed readings, building a collaborative annotated bibliography on a wiki, 3) allowing faculty to publish course resources like syllabi and handouts, and students to edit and comment on these directly for all to see, 4) allowing faculty to use the wikis as a knowledge base, which enables them to share reflections and thoughts regarding teaching practices, and allowing for versioning and documentation, and 5) using the wiki as a presentation tool, for group authoring, and to make concept maps.

Hsiao, Mikolaj, and Huang (2013) surveyed 22 students regarding the use of wikis to support project-based learning in an online course. The students' responses regarding the use of wikis were not positive. This was attributed this to fact that the students were only required to use the wiki for presenting the final group project. Students' limited use of the wiki in the course likely caused most students to not fully explore the features of the wiki and observe all of the advantages the wiki can have when managing a group assignment. Judd, Kennedy and Cropper (2010) supports this in their analysis of student wiki contributions which found that the majority of students made

their wiki contributions near the end of the assessment activity and most made all of their wiki contributions in a single day. This suggests that these students had limited interactions with the wiki tool and other students. If one or more students in the group waits until the last day to contribute to the wiki it undermines the group's ability to genuinely engage in joint online content creation and discussion.

Cummins (2013) found that wikis were very effective in learning support by sixty percent of the students surveyed with another forty percent saying the wikis were effective in learning support. Demographically, ninety percent of the students surveyed were female. By incorporating wikis and other social software into their courses, educators prepare students to make innovative use of collaborative software tools (Parker & Chao, 2007). Ultimately, students who learn to use wikis will possess a key skill for the future.

Blogs

The term Blog is short for Web log (Eggleston, 2011, Palloff & Pratt, 2009). Although an often underutilized form of written interactive assessment, Boettcher (2011) asserted that “blogs help students understand the growth cycle of learning new concepts and how and why they think the way they do.” While blogs share many characteristics with private journals, blogs are public and allow students to post comments on the student's work (Boettcher, 2011; Eggleston, 2011). Blogs differ from wikis in that blogs can be commented on by other students, but not amended. It is this ability for blog readers to leave comments that make blogs an interactive form of assessment (Watwood et al., 2009). Blogs allow students to show their conceptual understanding of course materials and most successful when the blog focuses an entry where individual insight

and creativity are encouraged (Eggleston, 2011). They are a great way for students to develop their writing skills and share ideas and thoughts (Watwood et al., 2009). Blogs help faculty understand not only what online students are thinking, but also the source(s) of their thinking (Boettcher, 2011). If used appropriately, blogs actively engage students, help them manage their time, and provide opportunities for diverse answers to the questions or problems posed by the instructor (Eggleston, 2011).

Smith et al.(2008) found that, despite a variety of opinions, the use of wikis and blogs in the course assessment was generally viewed positively by students who completed course evaluations. The study's authors attributed the positive student feedback of wikis and blogs to course tutors who regular monitoring student progress and providing quick and regular feed back to students.

Exams: Tests and Quizzes

Traditional tests as “those administered at the end of instruction, with little or no performance feedback given prior to the tests, and include multiple-choice, fill-in-the-blank, short answer, true-false, and the like (Robinson 2000).” Traditional forms of assessment like tests and quizzes are surface level assessment tools because they are centered around receptive skills and not on productive abilities (Buluc et al., 2013). For students who want to memorize information, tests ask students to look into the bank of knowledge, retrieve information, and express it on the test (Lahey, 2014). Multiple choice or short answer questions can be utilized in online assessments for items that only require memorization and retention (Dikli, 2003). Additionally, online test and quizzes can be produced by online faculty to assess low levels of cognitive skill growth that may be required to solve higher-level academic challenges (Eggleston, 2011). However, tests and

quizzes should not be the primary method of online assessment, which should extend beyond test, quizzes, and other rote memorization (Palloff & Pratt, 2009). In situations where students need to memorize information, it is better to use low-stakes, formative assessment tests that require students to retrieve information from their memories instead of reading and reviewing the information over and over from notes or a textbook (Lahey, 2014).

While performance based assessments have grown in popularity, objective tests and quizzes continue to have a place in assessment, particularly when efficiency is a priority (Suskie, 2004). Roediger, III, and Karpicke (2006) contend that not only do test and exam assessments measure what students know, they also change knowledge by improving future retention of the tested knowledge, even when performance on the assessment is not great and feedback is not given on the missed information. This is a phenomenon known as the testing effect. In addition to improving future retention, practice tests and self-quizzes based on course homework and readings help students become aware of what will be expected in terms of the types of questions asked and how to use the technology to take the tests and quizzes (Palloff & Pratt, 2009, p. 41).

Struyven et al. (2005) reviewed studies about various assessment methods in the *Assessment & Evaluation in Higher Education* journal. Their findings indicate that students have strong views about different assessment and evaluation techniques. In most studies, students favored multiple-choice exam questions over essay type questions despite findings that essay type questions invoke deeper levels of learning than multiple-choice questions. Some studies did conclude that females were more favorable towards essay exams rather than multiple-choice exams. Studies also revealed that students

questioned the fairness of common evaluation modes compared to more innovative assessment modes.

Online learning platforms provide a test assessment that allows instructors to create fixed-choice questions, like multiple choice, either/or, matching, or ordering, that are automatically graded with the correct answer and feedback to students (Hallas, 2008). However if these automated, fixed-choice exams are not carefully written, they can overemphasize simple factual memorization and lower level cognitive proficiencies, instead of higher-order problem solving and communication skills like analysis, synthesis, evaluation, writing, reading, speaking, and listening. Online courses should emphasize student centered learning using a variety of formative and summative assessments that assess deeper approaches to learning and are relevant to the student's future workplace. Instructors should review their existing assessment practices when teaching in an online environment to ensure that their courses are designed with learning strategies that include higher order thinking and communication processes that may enhance student motivation and participation.

Escudier et al. (2011) reported in the *Journal of Computer Assisted* that a group of English dental students felt that short answer exam questions were a better test of their knowledge than multiple choice questions. They concluded that assessment techniques in online courses need to go beyond simple multiple choice and true/false questions and should incorporate more written answer questions into the course assessments. Multiple choice exams are not the best reflection of quality student skills and only encourage the use of low level skills of simple memory and recall (Kelly, Baxter & Anderson, 2010). Students use low-level, surface strategies and motives when preparing for multiple choice

exams compared to deeper strategies and motives when preparing for written and essay type exams.

Multiple Choice Questions

Multiple choice questions are well known with lots of faculty having experience constructing them (Schuwirth & van der Vlugten, 2003). The major advantage of multiple choice questions is their high reliability per hour of testing. They can be answered quickly and cover a large field of subject matter (Schuwirth & van der Vlugten, 2003). Multiple-choice questions can measure various kinds of knowledge, including students' understanding of terminology, facts, principles, methods, and procedures, as well as their ability to apply, interpret, and justify (Piontek, 2008). While well-constructed multiple choice questions can test more than simple facts, they are often used by faculty to test only facts (Schuwirth & van der Vlugten, 2003). That's because most teacher believe that is all multiple choice questions are fit for.

Multiple choice questions are more flexible than true/false questions, are normally less complicated to create (Schuwirth & van der Vlugten, 2003), and offer greater reliability as the opportunity for guessing is reduced with the larger number of options (Piontek, 2008). Multiple-choice questions require the instructor to create incorrect, yet plausible, options that can occasionally be difficult and time producing to produce (Oosterhof et al, 2008; Piontek, 2008).

Desirable multiple-choice questions should begin with a stem that clearly communicates the problem to be addressed, with answer options that are all parallel in type of content, consistent with the stem, and avoid the use of all of the above and none of the above options (Oosterhof et al., 2008). Additionally, the options should be put in

order alphabetically, unless an alternative rearrangement of the options is more logical, and avoid using repetitive words that can be more efficiently relocated in the stem (Oosterhof et al., 2008).

However, an analysis by Palmer and Devitt (2007) shows that it is possible to create a multiple choice question assessment that tests a broad range of a curriculum and measures a variety of cognitive skills using structurally sound questions. In fact, well constructed multiple choice and true-false questions benefit from a high reliability when the group of questions is valid and there are an adequate numbers of questions (Palmer & Devitt, 2007). The key to using multiple choice questions is teaching faculty how to write good multiple choice questions (Schuwirth & van der Vlugten, 2003). Because multiple choice exams are easier to construct, faculty who do not take the time to become skilled at drafting multiple choice questions that test higher order thinking skills risk only testing recall and recognition and not assessing deep learning that is important (Piontek, 2008).

Kılıç-Çakmak, Karataş, and Ocak (2009) studied 138 first year students majoring in computer programming and business administration at the Distance Education Community College of Gazi University, the equivalent to a community college in the United States. Their study, published in the Quarterly Review of Distance Education, found some students preferred multiple choice exams, indicating students who want high success without a lot of work and that they are not responsible enough for their own learning in the online environment. With the use of summative evaluations, students become more interested in simply passing exams than actually learning the course

content. The researchers recommend integrating alternative methods of online assessment in order to shift the focus away from only passing or failing exams.

Matching Questions

Matching questions are a special type of multiple choice format where a set of many questions share a larger array of options available as answers (Oosterhof, Conrad, & Ely, 2008, P. 118). Often matching questions are presented numerically in a column on the left side of the page while the shared options are listed alphabetically in a column on the right side of the page (Oosterhof, Conrad, & Ely, 2008, P. 118). As with multiple choice items, the options in matching question should all be parallel in content (Oosterhof, Conrad, & Ely, 2008, P. 118).

True-False Questions

According to Schuwirth and van der Vlugten (2003) the primary advantage of true/false questions is that they are often brief, can cover a wide domain, be answered rapidly by the students, and be graded promptly by the grader. Unfortunately, flawless true/false questions are difficult to write because the statements need to be defensibly true or absolutely false. If a True/False question has “false” as its correct answer, it can only be concluded that students who answered it correctly knew the statement was false, not that they knew the correct fact. Whenever possible, it is best to avoid using true/false questions when assessing students.

Desirable true/false questions should only present a single proposition and be unequivocally true or false (Oosterhof et al., 2008). When asking true/false questions adjectives and adverbs like frequent, sometimes, and often, which imply an indefinite degree, should be avoided because they cannot be answered unequivocally. Adjectives

and adverbs with absolute meanings, like all, always, every, never, and no, should also be rejected because they normally make the answer to a true/false question false.

Fill in the Blank/Listing Questions

Fill in the blank and listing items are often used in quizzes and exams (Oosterhof et al, 2008). Sometimes called completion questions, fill in the blank and listing items are constructed-response questions requiring students to complete one or more words, or a short phrase that is missing from the item. Fill in the blank and listing questions are easy to compose, require students to generate an answer instead of selecting an answer from a group of answer options, and lots of fill in the blank questions can be incorporated into a quiz or exam. These questions are often limited to measuring the recall of information and are more likely to be scored erroneously, compared to objective questions, because of the complexity of automatic scoring of items in online platforms. Items can be erroneously scored because of a minor misspelling or the possibility of multiple ways to express a correct answer.

Well-written fill in the blank and listing questions should measure the specific skills identified and targeted, be written to produce a specific correct answer(s) or very homogeneous set of correct answers, and use the same grammatical structure and vocabulary contained in the source of instruction (Oosterhof et al., 2008). Additionally, the correct answer should be a key word, the blank(s) should be placed at or near the end of the item, and there should be a sufficiently limited number of blanks when the question contains more than one answer. It is also important that the questions be written at or below the students' reading level.

Short Answer Questions

Short answer questions are open response questions that are flexible and the most widely accepted type of assessment question (Schuwirth & van der Vlugten, 2003). While the open response design of short answer questions is believed to be inherently superior to the multiple choice layout, evidence indicates that this assumed superiority is limited. Short answer questions are open and more flexible, but have lesser degrees of reliability. Multiple-choice questions provide a clearer, more focused assessment than more ambiguous short answer questions (Piontek, 2008).

Short answer questions are generally less suitable for testing factual knowledge and should be designed to test aspects of competence that cannot be tested any other way (Schuwirth & van der Vlugten, 2003). Another drawback to the use of open response, short answer questions is avoiding student confusion regarding how detailed their answer should be while not giving away the answer. A final disadvantage of open response, short answer questions is that they take longer to answer and grade when compared to multiple choice questions.

Maxwell (2010) recommends the use of short answer questions over essay/discussion questions on history exams to test “objective knowledge” of identifying concepts, historical actors, organizations, and events. This is because completing multiple lengthy essay/discussion questions during a timed exam period requires students to hurry when writing their answers and rarely results in profound examples of historical analysis. The study also recommends the use of short answer questions over multiple choice questions because it is very challenging to devise difficult yet uncomplicated multiple choice questions. Students can also guess on multiple choice questions which can muddle

the accuracy of the history assessment by measuring the students' ability to guess and not their level of historical knowledge.

Discussion/Essay Questions

Discussion and essay questions are excellent for evaluating how well students summarize, hypothesize, find relationships, and apply known procedures to new conditions and situations (Schuwirth & van der Vlugten, 2003). Discussion and essay questions represent a flexible assessment format for distance learners (Oosterhof et al., 2008) and are valuable assessment tools because their flexibility and ability to measure higher order learning skills (Dikli 2003). Discussion and essay questions are uniquely able to provide instructors with insight into the various aspects of a student's writing ability and communication skills, along with their capacity to process information (Oosterhof et al., 2008; Schuwirth & van der Vlugten, 2003).

Unfortunately, answering discussion and essay questions is time consuming and can limit their reliability. When constructing discussion and essay questions, it is crucial for the instructor to balance defining the criteria on which the answers will be judged with not over-structuring these criteria in an attempt to be objective (Schuwirth & van der Vlugten, 2003). Instructor subjectivity can also be an issue in the grading of discussion and essay questions when the scores assigned to students' answer are inconsistent (Dikli, 2003; Oosterhof et al., 2008). One solution is for the instructor to use some type of rubric that provides provide structure and criteria for students taking the exam and the scorers grading the questions (Dikli 2003). However, being too detailed in structure for the sake of objectivity can result in a large loss of validity with little or no gain in reliability (Schuwirth & van der Vlugten, 2003).

Ultimately utilizing discussion and essay questions may not be very practical, especially in courses with large numbers of students, because they have to be personally graded by the instructor or other scorer making them more difficult and time consuming to grade (Dikli, 2003; Oosterhof et al., 2008). Because of these time constraints, including only a few discussion and essay items on an exam can result in the instructor testing a smaller portion or sample of what the students are expected to learn (Oosterhof et al., 2008). Interestingly, where discussion or essay exams are used, many students spend the nearly all of their time writing out the answers instead of solving the problems presented in the questions. The use, discussion and essay items should probably be used sparingly and in situations where open-ended, short answer questions or multiple choice questions are not appropriate means of assessment (Schuwirth & van der Vlugten, 2003). Ultimately, there is likely no best way to assess online learners because there are pros and cons to each assessment technique (Dikli, 2003).

Online Assessment Best Practices

Developing quality assessments does not require expertise in assessment research and training, and can be accomplished by committed faculty from all educational disciplines (Angelo & Cross, 1993). According to Palloff and Pratt (2009, p. 30), effective online assessments should follow the following principles:

1. Design learner-centered assessments that include self-reflection;
2. Design and include grading rubrics for the assessment of contributions to the discussion as well as for assignments, projects, and collaboration itself;
3. Include collaborative assessments through public posting of papers, along with comments from students;

4. Encourage students to develop skills in providing feedback by providing feedback and by modeling what is expected;
5. Use assessment techniques that fit the context and align with the learning objectives;
6. Design assessments that are clear, easy to understand, and likely to work in an online environment, and
7. Ask for and incorporate student input into how assessments should be conducted (Angelo & Cross, as cited in Palloff & Pratt, 2009, p. 30).

No single assessment technique is right for all situations and online education gives faculty the opportunity for flexible and individualized assessments (Bartley, 2006, p. 17). The Hanover Research Council's (2009) Best Practices in Online Teaching Strategies report recommends the following when assessing of students in online courses:

1. Assessment through an evaluation process that uses several methods and applies specific standards for student learning;
2. The regular review of intended learning outcomes to ensure clarity, utility, and appropriateness;
3. Timely evaluations at regular intervals to increase course flexibility for students;
4. The assurance that monitoring/proctoring policies are in place during assessments of student learning;
5. The integration of some sort of verification method to ensure academic integrity;

6. Assessment strategies are integral to the learning experience, enabling learners to assess their progress, identify areas for review, and re-establish immediate learning or lessons goals;

7. Strategies are varied (self-tests, quizzes, journals, writing assignments, projects, exams, etc.) and aligned to instructional goals, and

8. Assessment criteria are clearly articulated.

Assessment techniques in online courses should go beyond simple multiple choice and true/false questions and should incorporate more written answer types of questions. Multiple choice exams are not the best reflection of quality student skills and, instead, encourage the use of low level skills of simple memory and recall (Kelly, Baxter & Anderson, 2010). Students are shown to use low-level, surface strategies and motives when preparing for multiple choice exams compared to deeper strategies and motives when preparing for written and essay type exams.

Morgan and O'Reilly (2006, pp. 86-87) suggest that good online assessment has the following qualities: “a clear rationale and consistent pedagogical approach; explicit values, aims, criteria, and standards; relevant, authentic, and holistic tasks; awareness of students’ learning contexts and perceptions; sufficient and timely formative feedback; a facilitative degree of structure; appropriate volume of assessment; valid and reliable assessments; certifiable as the students own work, and subject to continuous improvement via evaluation and quality enhancement.”

Henry L. Roediger III has ten benefits to testing and their applications to educational practice (Roediger, Putnam, & Smith, 2011; Lahey, 2014). Those benefits include:

1. Testing aids later retention.
2. Testing identifies gaps in knowledge.
3. Testing causes students to learn more from the next learning episode.
4. Testing produces better organization of knowledge.
5. Testing improves transfer of knowledge to new concepts.
6. Testing can facilitate retrieval of information that was not tested.
7. Testing improves metacognitive monitoring.
8. Testing prevents interference from prior material when learning new material.
9. Testing provides feedback to instructors.
10. Frequent testing encourages students to study

Roediger admits that the extra assessments and course adjustments will take up more of a teacher's time (Lahey, 2014). However, testing is a powerful tool to enhance learning and, if properly designed, will facilitate student learning and not encumber it.

A study by Sun, Tsai, Finger, Chen, and Yeh (2008) found that diversity in assessment positively influenced perceived e-learner satisfaction with e-learning. Morgan and O'Reilly (2006) also suggest using an appropriate combination of assessments techniques to increase overall validity. The concept of validity seeks to determine if the assessments used in the course provide the most accurate representation possible of the specific knowledge and skills being measured by the assessment.

CHAPTER 3: METHODOLOGY

Background of the Study

As stated in Chapter One, online education has exploded dramatically over the past decade. The objective of Chapter Three was to propose methodology for a study that will add to current research in online education assessment by addressing the assessment techniques preferred by online students. This researcher embarked on the study in order to examine online student attitudes regarding the online assessment techniques they personally prefer and those they learn the most from. There has been lots of research conducted on the topic of online education in general. However, much of the online education research does not deal with student assessment. Research studies that do evaluate student viewpoints regarding online assessment do not breakdown student attitudes of online assessment techniques based on both personal preference and learning value. The study collected data regarding student attitudinal ratings of fifteen commonly used assessment techniques selected by the researcher based on their personal preference for and the learning value of each assessment technique.

Research Questions

The research questions for this study were as follows:

1. What are the student's mean ratings and rank order of their personal preference for each type of online assessment?
2. What are the student's mean ratings and rank order of perceived learning value for each type of online learning assessment?

3. Are there differences between student's ratings of their personal preference for and perceived learning value of various types of online assessments?

4. What is the relationship between student's personal preference for and perceived learning value of various types of online assessments?

Hypotheses

From the research questions the following null hypotheses emerged:

1. There are no significant differences between student's personal preference for and perceived learning value of various types of online assessments.

The test to be used is a paired samples t-test. Significance was determined by comparing the p-value to $\alpha = .05$. The paired-samples t-tests were conducted to compare the personal preference rating of each assessment technique to its corresponding perceived learning value rating as follows:

- Personal Preference of Reflection/Issue Papers to Learning Value of Reflection/Issue Papers
- Personal Preference of Journal Article Reviews to Learning Value of Journal Article Reviews
- Personal Preference of Research Papers to Learning Value of Research Papers
- Personal Preference of Group Papers/Portfolios to Learning Value of Group Papers/Portfolios
- Personal Preference of Journals to Learning Value of Journals
- Personal Preference of Discussion Boards to Learning Value of Discussion Boards
- Personal Preference of Wikis to Learning Value of Wikis
- Personal Preference of Blogs to Personal Preference of Blogs
- Personal Preference of Multiple Choice Questions to Learning Value of Multiple Choice Questions
- Personal Preference of Matching Questions to Learning Value of Matching Questions
- Personal Preference of True/False Questions to Learning Value of True/False Questions
- Personal Preference of Fill-in-the-Blank Questions to Learning Value of Fill-in-the-Blank Questions
- Personal Preference of Listing Questions to Learning Value of Listing Questions

- Personal Preference of Short Answer Questions to Learning Value of Short Answer Questions
- Personal Preference of Discussion/Essay Questions to Learning Value of Discussion/Essay Questions

2. There are no significant relationships between student's personal preference for and perceived learning value of various types of online assessments.

H_0 = There will be no significant relationships between student's personal preference for and rating of the learning value of various types of online assessments.

H_1 = There will be significant relationships between student's personal preference for and rating of the learning value of various types of online assessments.

The test used will be a bivariate correlation assessing each assessment technique's personal preference rating with its learning value rating. Significance was determined by comparing the p-value to $\alpha = .05$. The bivariate correlations were conducted on the following online assessment techniques:

- Personal Preference of Reflection/Issue Papers and Learning Value of Reflection/Issue Papers
- Personal Preference of Journal Article Reviews and Learning Value of Journal Article Reviews
- Personal Preference of Research Papers and Learning Value of Research Papers
- Personal Preference of Group Papers/Portfolios and Learning Value of Group Papers/Portfolios
- Personal Preference of Journals and Learning Value of Journals
- Personal Preference of Discussion Boards and Learning Value of Discussion Boards
- Personal Preference of Wikis and Learning Value of Wikis
- Personal Preference of Blogs and Personal Preference of Blogs
- Personal Preference of Multiple Choice Questions and Learning Value of Multiple Choice Questions
- Personal Preference of Matching Questions and Learning Value of Matching Questions
- Personal Preference of True/False Questions and Learning Value of True/False Questions
- Personal Preference of Fill-in-the-Blank Questions and Learning Value of Fill-in-the-Blank Questions

- Personal Preference of Listing Questions and Learning Value of Listing Questions
- Personal Preference of Short Answer Questions and Learning Value of Short Answer Questions
- Personal Preference of Discussion/Essay Questions and Learning Value of Discussion/Essay Questions

Sample / Participants

The initial sample for the research study included 276 students who were identified as majoring in either the online Bachelor's of Science Degree program in Police Studies or the online Bachelor's of Science Degree program in Correctional and Juvenile Justice Studies within the College of Justice and Safety at Eastern Kentucky University during the Spring 2014 semester. Upon IRB approval on April 4, 2014, all of the students identified were invited to participate in the Web-based, online survey. Even with reminder emails, only 13 of the 276 students had taken the survey after 30 days of collecting data.

At this point the researcher and dissertation chair decided to expand the sample to include those EKU students majoring in the on-campus Bachelor's of Science Degree Program in Criminal Justice, the on-campus Bachelor's of Science Degree Program in Police Studies, and the online Bachelor's of Science Degree Program in Homeland Security. Once an IRB revision was approved on May 22, 2014, these additional students were included the final study sample and a new email was sent out to 1,505 students inviting them to participate in the Web-based, online survey.

Context of the Study

Eastern Kentucky University (EKU) is a university located in Richmond, KY. The university had a Fall 2013 enrollment of approximately 16,000 undergraduate and

graduate students of which 11,651 were full-time students and 13,891 were undergraduate students (“Factbook Report”, 2014). Of the 13,891 undergraduate students 56% were female and 44% were male. Additionally 84.5% of undergraduate students were White, non-Hispanic, 5.5% were black, non-Hispanic, 2.6% were of unknown race or ethnicity, 2.1% were from two or more races, 2.0% were non-resident, aliens, 1.8% were Hispanic or Latino, 1.1% were Asian, 0.3% were American Indian or Alaskan Native, and 0.1% were Hawaiian or Pacific Islander.

The ECU College of Justice and Safety, a Program of Distinction since 1998, is divided into the School of Justice Studies and the School of Safety, Security & Emergency Management (“Eastern Kentucky University”, n.d.). The School of Justice Studies offers the Bachelor’s Degree in Police Studies, Bachelor’s Degree in Criminal Justice, and Master’s Degree in Criminal Justice on-campus. Additionally, the School of Justice Studies offers the Bachelor’s Degree in Police Studies, Bachelor’s Degree in Corrections and Juvenile Justice Studies, and Master’s Degree in Adult, Juvenile and Community Corrections Leadership online. The School of Safety, Security & Emergency Management is home to the Online Bachelor of Science Degree in Homeland Security, whose students were included in the sample.

The researcher selected students who were majoring in the Bachelor of Science Degree in Police Studies (Online and On-Campus), Bachelor of Science Degree in Correctional and Juvenile Justice Studies (Online), Bachelor of Science Degree in Criminal Justice (On-Campus), and Bachelor of Science Degree in Homeland Security (Online) during the Spring 2014 semester to participate in the study. The ECU Online and On-Campus Bachelor’s Degree in Police Studies major requires 48 credit hours of

major studies divided into 24 credit hours of police studies core courses and 24 credit hours of police studies elective courses (“Eastern Kentucky University”, n.d.). The ECU Online Bachelor’s Degree in Correctional and Juvenile Justice Studies major requires 45 credit hours of major studies divided into 21 credit hours of core courses, 18 credit hours of elective courses, and 6 credit hours of supporting courses. The ECU On-Campus Bachelor’s Degree in Criminal Justice requires 45 credit hours of major studies divided into 15 credit hours of criminal justice core courses, 18 credit hours of criminal justice elective courses, and 12 credit hours of supporting courses. The ECU Online Bachelor’s Degree in Homeland Security major requires 69 credit hours of major studies divided into 39 credit hours of Homeland Security core courses, 6 credit hours of Homeland Security elective courses, and 24 credit hours of supporting courses.

Variables

Dependent variables examined by the research study included fifteen different online assessment techniques. The online assessment techniques examined in the survey included Reflection/Issue Papers, Journal Article Reviews, Research Papers, Group Papers/Portfolios, Journals, Discussion Boards, Wikis, Blogs, Multiple Choice Questions, Matching Questions, True-False Questions, Fill in the Blank Questions, Listing Questions, Short Answer Questions, and Discussion/Essay Questions. These assessment variables were initially rated by the students based on the student’s personal preference for the online assessment technique. After evaluating the online assessment techniques based on student personal preference, the students will then be asked to rate the same assessment variables based on the learning value of each assessment technique to the students. Figure 3.1 shows the fifteen variables and the survey options.

Variable	Options
Reflection / Issue Papers	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Journal Article Reviews	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Research Papers	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Group Papers/Portfolios	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Journals	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Discussion Boards	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Wikis	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Blogs	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Multiple Choice Questions	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Matching Questions	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
True-False Questions	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Fill in the Blank Questions	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Listing Questions	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Short Answer Questions	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable
Discussion/Essay Questions	Strongly Disagree, Disagree, Somewhat Disagree, Somewhat Agree, Agree, Strongly Agree, Not Applicable

Figure 3.1: Dependent Variables and Survey Answer Options

Research Design

The purpose of the proposed study was to understand the attitudes towards online assessment techniques of students enrolled in either the Bachelor of Science Degree in Police Studies (Online and On-Campus), Bachelor of Science Degree in Correctional and Juvenile Justice Studies (Online), Bachelor of Science Degree in Criminal Justice (On-Campus), and Bachelor of Science Degree in Homeland Security (Online) during the

Spring 2014 semester. The student respondents were asked to rate each of the fifteen online assessment techniques based on their personal preference for and the learning value of each assessment technique.

The first page of the survey contained a restatement of the consent form reminding participants that their participation in the survey was voluntary and that they could choose not participate without penalty. Those who elected to take the survey proceeded to the second page of the survey. The second page of the survey collected demographic data from the respondents that may be used in further research studies.

The third page of the survey was a Likert style survey in which the respondents rated each of the fifteen online assessment techniques based on their personal preference for each assessment technique. Response options were along a six-point Likert scale ranging from (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) somewhat agree, (5) agree, and (6) strongly agree. After rating the fifteen assessment techniques based on a Likert scale, the final question asked students to order rank their top three assessment techniques based on their personal preference.

The fourth page of the survey was similar to the third page, except that participants rated each of the assessment techniques based on its learning value to them. The fourth page of the survey was also a Likert style survey in which the respondents rated fifteen online assessment techniques based on how much the learning value they attributed to each assessment technique. Response options were along a six-point Likert scale ranging from (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) somewhat agree, (5) agree, and (6) strongly agree. After rating the fifteen assessment techniques based on a

Likert scale, the final question asked students to order rank their top three assessment techniques based on its learning value.

Data Collection

To examine the attitudes of students regarding online assessment techniques in this study group, the researcher collected data from the web-based survey from April 22, 2014 through June 6, 2014. The respondents were students at Eastern Kentucky University who are currently majoring in either the online Bachelor's of Science Degree program in Police Studies, online Bachelor's of Science Degree program in Correctional and Juvenile Justice Studies, on-campus Bachelor's of Science Degree program in Criminal Justice, on-campus Bachelor's of Science Degree program in Police Studies, or online Bachelor's of Science Degree program in Homeland Security. Approval for conducting the research project was obtained from the Eastern Kentucky University Institutional Review Board.

Because the researcher has developed his own survey, he obtained feedback from faculty in the department of Educational Leadership in the College of Education at Eastern Kentucky University before implementation of the survey for dissertation. The faculty helped determine the comprehensiveness and proper wording of the survey questions, evaluate its reliability and validity, and assure the effectiveness of the statistical and analytical procedures used. Once the IRB approval was granted, an initial email was sent to every student identified as majoring in either the online Bachelor's of Science Degree program in Police Studies or the online Bachelor's of Science Degree program in Correctional and Juvenile Justice Studies. The email detailed the purpose of the study, listed the assessment techniques being investigated, explained how to take the

survey, explained how the information gathered was going to be used, and included a secure link to the survey. The participants were also promised that any information provided would be used jointly and their individual responses would remain confidential. The survey remained open for four weeks starting April 22, 2014. In order to maximize the response rate, reminder emails were sent out about every two weeks after the initial email reminding those students who had not participated in the survey that they still had time to do so. At the end of this initial data collection period only 13 of the 276 students invited to participate in the survey had taken it.

The researcher and dissertation chair expanded the sample to include ECU students majoring in the on-campus Bachelor's of Science Degree Program in Criminal Justice, the on-campus Bachelor's of Science Degree Program in Police Studies, and the online Bachelor's of Science Degree Program in Homeland Security. The IRB revision was approved on May 22, 2014. A new email invitation to participate in the online survey was then sent to the 1,505 students in the newly expanded sample group and the collection of data from the expanded sample continued through June 6, 2014.

Data Analysis

The data collected was analyzed using the IBM Statistical Package for Social Sciences (SPSS) software program. The researcher performed the following statistical analysis on the data collected: (1) The researcher extracted descriptive statistics of the data, including mean and standard deviation of the personal preference and learning value ratings of the assessment techniques. (2) The researcher order ranked the mean ratings of the fifteen personal preference ratings of assessment from 1 to 15. Additionally, the researcher extracted the data collected from student who ranked their top three

assessment techniques based on personal preference. (3) The researcher order ranked the mean ratings of the fifteen learning value ratings of assessment from 1 to 15.

Additionally, the researcher extracted the data collected from student who ranked their top three assessment techniques based on learning value. (4) The researcher determined if there were statistically significant differences between personal preference rating and the corresponding learning value rating of each assessment technique. The researcher conducted fifteen paired-samples t-test to determine the significant differences. (5) The researcher determined if there were significant relationships between personal preference rating and the corresponding learning value rating of each assessment technique. The researcher conducted bivariate correlations to assess each online assessment technique's personal preference rating and its corresponding learning value rating.

Paired-Samples t-tests

A t-test is a parametric inferential statistical test of the null hypothesis for a single sample where the population variance is unknown (Jackson, 2009, p. 423). A paired samples t-test is used when there are two experimental conditions and the same participants took part in both conditions of the experiment" (Field, 2011). The paired-samples t-test is sometimes referred to as the dependent-means or matched-pairs test. The paired-samples t-test is a parametric test based on the normal distribution. In a paired-samples t-test this means that the sampling distribution of the differences between scores should be normal, not the raw scores themselves Another assumption of the pair-samples t-test is that data are measured at least at the interval level. Significance for the paired-samples t-tests were established at the $\alpha = .05$ level.

Bivariate correlations

A bivariate correlation is an assessment of the degree of relationship between two variables (Field, 2011; Jackson 2009). Pearson's product-moment correlation coefficient (Pearson's r), Spearman's rank correlation coefficient (Spearman's ρ), and Kendall's rank correlation coefficient (Kendall's τ) are examples of bivariate correlations. Of the three, Pearson's r is probably the most commonly used correlation coefficient when both variables are measured on an interval or ratio level scale (Jackson, 2009). A correlation coefficient is a measure of the degree of relationship between two scores that varies between -1.00 and +1.00. Significance for the bivariate correlations was established at the $\alpha = .05$ level.

CHAPTER 4: RESULTS

The primary objective of this study was to ascertain student attitudes toward many of the commonly used assessment techniques in online courses and how students value them. The study specifically investigates how students taking online courses evaluate their personal preference for and the learning value of fifteen commonly used online assessment techniques, and how this can help improve online assessment in the future. This chapter reviews and details the descriptive, inferential, and correlational statistics collected.

Participants

The participants in this study were students in the College of Justice and Safety at Eastern Kentucky University who had taken online courses in their major. Students majoring in the Bachelors of Science Degrees in Criminal Justice (On-Campus), Police Studies (On-Campus), Police Studies (Online), Homeland Security (Online), and Correctional and Juvenile Justice Studies (Online) were invited take the Web-based Online Survey. Participants consented to participate in the study by clicking on the survey link in the invitation email and then clicking the “next” button at the bottom of the instructional page of the survey. Of the 1,505 students invited to participate in the Web-based survey, only 52 took the survey for a return rate of 3.4%. However, only 42 respondents (2.8 %) completed all the questions in the survey. The following sections describe the characteristics of the respondents in the survey.

Demographic Information

Race

The majority of the respondents to the survey were white/Caucasian with 46 participants (95.8%), followed by Black/African American students with 2 participants (4.2%). Asian participants and American Indian/Alaskan Native participants each had 1 participant (2.1%). No participants from other racial classifications participated in the survey. These data are displayed in Table 4.1.

Table 4.1: Race (N=48)

Race	Frequency	Percent
White/Caucasian	46	95.8%
Black/African American	2	4.2%
Asian	1*	2.1%
Native Hawaiian or Pacific Islander	0	0.0%
American Indian or Alaskan Native	1**	2.1%
Other	0	0.0%

*Two participants chose more than one racial classification causing the frequency number to equal 50. * One participant identified herself as being both White/Caucasian and Asian. **One participant identified himself as being both White/Caucasian and American Indian/Alaskan Native.*

Age Ranges

The respondents' specific ages were not measured. Instead respondents identified their ages within age range categories of 18 to 24 years old, 25 to 34 years old, 35 to 44 years old, 45 to 54 years old, and 55 years and older. The data presented in Table 4.2 shows how the ages of the participants who completed the study were distributed across the five age categories. The largest number of participants, 15 (31.3%), came from the 25 to 34 year old age category. It was followed closely by the 14 participants (29.2%) in the

18 to 24 year old age, the 10 participants (20.8%) from the 45 to 54 year old age category, and the 9 participants (18.8%) from the 35 to 44 year old age category. There were no participants from the age 55 years old and older category.

Table 4.2: Age Range (N=48)

Age Range Category	Frequency	Percent
18 to 24 years old	14	29.2%
25 to 34 years old	15	31.3%
35 to 44 years old	9	18.8%
45 to 54 years old	10	20.8%
55 years old and older	0	0.0%

Gender

The majority of participants were female. The genders of those who completed the study included 33 female participants (68.8%) and 15 male participants (31.3%), as represented in Table 4.3 .

Table 4.3: Gender (N=48)

Gender	Frequency	Percent
Female	33	68.8%
Male	15	31.3%

Primary Reason for Taking Online Courses

Table 4.4 shows the reasons the participants chose to take online criminal justice courses. The largest number of participants, 20 (41.7%), chose convenience/flexibility as their primary reason for taking online courses. This was followed by distance to campus

at 11(22.9%), work responsibilities at 9 (18.8%), family responsibilities at 7 (14.6%), and learning preference/comfort at 1 (2.1%). One student answered both work responsibilities and not having to drive to campus as her primary reasons for taking online courses.

Table 4.4: Primary Reason for Taking Online Courses (N=48)

Age Range Category	Frequency	Percent
Family Responsibilities	7	14.6%
Work Responsibilities	9	18.8%
Distance to Campus	11	22.9%
Convenience/Flexibility	20	41.7%
Learning Preference/Comfort	1	2.1%
Other	1*	2.1%

* *One student indicated both work responsibilities and not having to drive to campus as co-reasons for taking online courses causing the frequency to add up to 49.*

Participants' Bachelor Degree Program

Of the 48 participants who completed this survey item, 21 (43.8 %) were majoring in the Bachelor of Science in Criminal Justice (On-campus) degree program. This was followed by 14 participants (29.2%) majoring in the Bachelor of Science in Correctional and Juvenile Justice Studies (Online) degree program, 7 participants (14.6%) majoring in the Bachelor of Science in Police Studies (Online) degree program, and 6 participants (12.5%) majoring in the Bachelor of Science in Homeland Security (Online) degree program. There were no participants from the Bachelor of Science in Police Studies (On-campus) degree program. The data for this information can be found in Table 4.5.

Table 4.5: Bachelor’s Degree Program Major. (N=48)

Age Range Category	Frequency	Percent
Homeland Security (Online)	5	12.5%
Criminal Justice (On-campus)	21	43.8%
Police Studies (Online)	7	14.6%
Correctional/Juvenile Justice Studies (Online)	14	29.2%
Police Studies (On-campus)	0	0.0%

Research Questions Results

Research Question 1

What are the student’s mean ratings and rank order of their personal preference for each type of online assessment? In order to answer research question one, respondents to the online Web-survey were asked to rank their personal preference for fifteen types of assessment techniques and questions on a scale of 1 (Strongly Disagree) to 6 (Strongly Agree). The participants had the option to choose not applicable for techniques they had not experienced to the *N* values for each mean score may be different. After ranking each technique individually, the participants were asked to rank their top three techniques based on their personal preference. This was done to help clarify and differentiate when the mean scores of multiple assessment techniques were the same or similar. Once the survey closed the information collected was downloaded into a Excel and SPSS files.

Mean Ratings and Rank Order of Personal Preference

The highest mean score for personal preference was Multiple Choice Questions ($M = 5.32, SD = .93$). The second highest mean score for personal preference was Matching Questions ($M = 4.98, SD = 1.27$). The third highest mean score was Reflection/Issue Papers ($M = 4.77, SD = 1.08$). True-False Questions yielded a mean

score of 4.69 ($SD = 1.51$), while Short Answer Questions followed with a mean score of 4.50 ($SD = 1.38$), and Discussion Boards had a mean score of 4.30 ($SD = 1.66$).

Assessment techniques with mean scored between 3.0 and 4.0 included Fill-in-the-Blank Questions ($M = 3.93$, $SD = 1.80$), Essay/Discussion Questions ($M = 3.91$, $SD = 1.67$), Journal Article Reviews ($M = 3.91$, $SD = 1.27$), Listing Questions ($M = 3.85$, $SD = 1.56$), and Listing Questions ($M = 3.85$, $SD = 1.56$). Finally, assessment techniques with mean scores between 2.0 and 3.0 included Blogs ($M = 2.79$, $SD = 1.69$), Research Papers ($M = 2.68$, $SD = 1.34$), Wikis ($M = 2.64$, $SD = 1.50$), and Group Papers/Portfolios ($M = 2.41$, $SD = 1.60$). This data is represented in Table 4.6.

Table 4.6: Mean Personal Preferences for Assessment Techniques in Descending Order

Assessment Technique	N	Mean	Standard Deviation
Multiple Choice Questions (PP)	38	5.32	.93
Matching Questions (PP)	40	4.98	1.27
Reflection/Issue Papers (PP)	44	4.77	1.08
True-False Questions (PP)	42	4.69	1.51
Short Answer Questions (PP)	42	4.50	1.38
Discussion Boards (PP)	43	4.30	1.66
Fill-in-the-Blank Questions (PP)	42	3.93	1.80
Essay/Discussion Questions (PP)	44	3.91	1.67
Journal Article Reviews (PP)	44	3.91	1.27
Listing Questions (PP)	41	3.85	1.56
Journals (PP)	43	3.05	1.51
Blogs (PP)	39	2.79	1.69
Research Papers (PP)	44	2.68	1.34
Wikis (PP)	36	2.64	1.50
Group Papers/Portfolios (PP)	44	2.41	1.60

Survey Scoring Scale: (1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree)

Top Three Rated Assessment Techniques for Person Preference

The highest total frequency reported for students' Top Three assessment techniques for personal preference was Multiple Choice Questions (30). The second most frequently was Discussion Boards (21). Assessment techniques with frequency reports between 11 and 20 included Reflection/Issues Paper (16), Matching Questions (12), and Short Answer Questions (12). Assessment techniques with frequency reports between 1 and 10 included Journal Article Reviews (9), True-False Questions (8), Fill-in-the-Blank Questions (8), Essay/Discussion Questions (7), Research Papers (2), and Journals (1). Listing Questions, Blogs, Wikis, and Group Papers/Portfolios were not rated as a Top Three assessment technique for any of the participants who took in the survey. Table 4.7 shows this data.

Table 4.7: Top Three Assessment Techniques – Highest Rated Assessment Techniques for Personal Preference in Descending Order of Total (N=42)

Assessment Technique	Total	1 st Choice	2 nd Choice	3 rd Choice
Multiple Choice Questions (PP)	30	15	9	6
Discussion Boards (PP)	21	8	6	7
Reflection/Issue Papers (PP)	16	8	6	2
Matching Questions (PP)	12	3	2	7
Short Answer Questions (PP)	12	5	4	3
Journal Article Reviews (PP)	9	0	6	3
True-False Questions (PP)	8	0	3	5
Fill-in-the-Blank Questions (PP)	8	0	5	3
Essay/Discussion Questions (PP)	7	2	1	4
Research Papers (PP)	2	1	0	1
Journals (PP)	1	0	0	1
Listing Questions (PP)	0	0	0	0
Blogs (PP)	0	0	0	0

Table 4.7 (continued)

Assessment Technique	Total	1 st Choice	2 nd Choice	3 rd Choice
Wikis (PP)	0	0	0	0
Group Papers/Portfolios (PP)	0	0	0	0

Research Question 2

What are the student's mean ratings and rank order of perceived learning value for each type of online learning assessment? In order to answer research question two, respondents to the online Web-survey were asked to rank the learning value of the fifteen types of assessment techniques and questions on a scale of 1(Strongly Disagree) to 6 (Strongly Agree). After ranking each technique individually, the participants were asked to rank their top three techniques based on its learning value. This was done to help clarify and differentiate when the mean scores of multiple assessment techniques were the same or similar. Once the survey closed the information collected was downloaded into an Excel and SPSS files.

Mean Ratings and Rank Order of Learning Value

The highest mean score for learning value was Reflection/Issue Papers ($M = 4.95$, $SD = 1.19$). The second highest mean score for learning value was Multiple Choice Questions ($M = 4.92$, $SD = 1.24$). The third highest mean score was Short Answer Questions ($M = 4.83$, $SD = 1.14$). Matching Questions yielded a mean score of 4.74 ($SD = 1.48$), Discussion Boards followed with a mean score of 4.67 ($SD = 1.42$), Essay/Discussion Questions had a mean score of 4.55 ($SD = 1.54$), and True-False Questions 4.51 ($SD = 1.47$).

Assessment techniques with mean scored between 4.0 and 4.5 included Fill-in-the-Blank Questions ($M = 4.50$, $SD = 1.48$), Journal Article Reviews ($M = 4.37$, $SD = 1.62$), and Listing Questions ($M = 4.18$, $SD = 1.38$). Finally, assessment techniques with mean scores between 2.9 and 4.0 included Journals ($M = 3.72$, $SD = 1.62$), Research Papers ($M = 3.71$, $SD = 1.74$), Wikis ($M = 3.16$, $SD = 1.63$), Blogs ($M = 3.15$, $SD = 1.70$), and Group Papers/Portfolios ($M = 2.90$, $SD = 1.66$). This information can be found in Table 4.8.

Table 4.8: Mean Learning Value for Assessment Techniques in Descending Order

Assessment Technique	N	Mean	Standard Deviation
Reflection/Issue Papers (LV)	42	4.95	1.19
Multiple Choice Questions (LV)	39	4.92	1.24
Short Answer Questions (LV)	41	4.83	1.14
Matching Questions (LV)	39	4.74	1.48
Discussion Boards (LV)	40	4.67	1.42
Essay/Discussion Questions (LV)	40	4.55	1.54
True-False Questions	41	4.51	1.47
Fill-in-the-Blank Questions(LV)	40	4.50	1.48
Journal Article Reviews (LV)	41	4.37	1.62
Listing Questions (LV)	40	4.18	1.38
Journals (LV)	39	3.72	1.62
Research Papers (LV)	42	3.71	1.74
Wikis (LV)	32	3.16	1.63
Blogs (LV)	33	3.15	1.70
Group Papers/Portfolios (LV)	41	2.90	1.66

Survey Scoring Scale: (1=Strongly Disagree, 2=Disagree, 3=Somewhat Disagree, 4=Somewhat Agree, 5=Agree, 6=Strongly Agree)

Top Three Rated Assessment Techniques for Learning Value

The highest total frequency reported for students' Top Three assessment techniques for learning value was Reflection/Issue Papers (21). The second most frequently reported assessment technique was Multiple Choice Questions (18). Assessment techniques with frequency reports between 10 and 17 included Discussion Boards (16), Matching Questions (13), Journal Article Reviews (13), and Essay/Discussion Questions (12).

Assessment techniques with frequency reports between 1 and 9 included True-False Questions (8), Short Answer Questions (7), Research Papers (7), Fill-in-the-Blank Questions (6), Journals (4), Blogs (1), and Group Papers/Portfolios (1). Listing Questions and Wikis were not rated as a Top Three assessment technique for any of the participants who took in the survey. These results are displayed in Table 4.9 below.

Table 4.9: Top Three Assessment Techniques – Highest Rated Assessment Techniques for Learning Value in Descending Order of Total. (N=42)

Assessment Technique	Total	1 st Choice	2 nd Choice	3 rd Choice
Reflection/Issue Papers (LV)	21	12	7	2
Multiple Choice Questions (LV)	18	13	3	2
Discussion Boards (LV)	16	5	3	8
Matching Questions (LV)	13	1	7	5
Journal Article Reviews (LV)	13	1	8	4
Essay/Discussion Questions (LV)	10	3	3	4
True-False Questions (LV)	8	0	4	4
Short Answer Questions (LV)	7	2	3	2
Research Papers (LV)	7	4	1	2
Fill-in-the-Blank Questions (LV)	6	1	2	3
Journals (LV)	4	0	0	4

Table 4.9 (continued)

Assessment Technique	Total	1 st Choice	2 nd Choice	3 rd Choice
Blogs (LV)	1	0	1	0
Group Papers/Portfolios (LV)	1	0	0	1
Listing Questions (LV)	0	0	0	0
Wikis (LV)	0	0	0	0

Research Question 3

Are there differences between student's ratings of their personal preference for and perceived learning value of various types of online assessments?

- *Pair 1 – Personal Preference for Reflection/Issue Papers and the Learning Value of Reflection/Issue Papers.*

A paired-samples t-test was conducted to compare the personal preference for Reflection/Issue Papers and the learning value of Reflection/Issue Papers. There was no significant difference in the scores for personal preference for Reflection/Issue Papers (M=4.76, SD=1.10) and learning value of Reflection/Issue Papers (M=4.95, SD=1.19); $t(41) = -.942, p = 0.352$.

- *Pair 2 – Personal Preference for Journal Article Reviews and the Learning Value of Journal Article Reviews.*

A paired-samples t-test was conducted to compare the personal preference for Journal Article Reviews and the learning value of Journal Article Reviews. There was a significant difference in the scores for personal preference for Journal Article Reviews (M=3.85, SD=1.30) and learning value of Journal Article Reviews (M=4.37, SD=1.62); $t(40) = -2.440, p = .019$.

- *Pair 3 – Personal Preference for Research Papers and the Learning Value of Research Papers.*

A paired-samples t-test was conducted to compare the personal preference for Research Papers and the learning value of Research Papers. There was a significant difference in the scores for personal preference for Research Papers (M=2.64, SD=1.32) and learning value of Research Papers (M=3.71, SD=1.74); $t(41) = -4.473, p < .001$.

- *Pair 4– Personal Preference for Group Papers/Portfolios and the Learning Value of Group Papers/Portfolios*

A paired-samples t-test was conducted to compare the personal preference for Group Papers/Portfolios and the learning value of Group Papers/Portfolios. There was a significant difference in the scores for personal preference for Group Papers/Portfolios (M=2.41, SD=1.58) and learning value of Lengthy Research Papers (M=2.90, SD=1.66); $t(40) = -2.233, p = .031$.

- *Pair 5– Personal Preference for Journals and the Learning Value of Journals*

A paired-samples t-test was conducted to compare the personal preference for Journals and the learning value of Journals. There was a significant difference in the scores for personal preference for Journals (M=3.03, SD=1.49) and learning value of Journals (M=4.38, SD=1.64); $t(39) = -4.886, p < .001$.

- *Pair 6– Personal Preference for Discussion Boards and the Learning Value of Discussion Boards*

A paired-samples t-test was conducted to compare the personal preference for Discussion Boards and the learning value of Discussion Boards. There was no significant difference in the scores for personal preference for Discussion Boards (M=4.25, SD =

1.71) and learning value of Discussion Boards ($M = 4.68$, $SD=1.42$); $t(39) = -2.010$, $p = .051$.

- *Pair 7– Personal Preference for Wikis and the Learning Value of Wikis*

A paired-samples t-test was conducted to compare the personal preference for Wikis and the learning value of Wikis. There was a significant difference in the scores for personal preference for Wikis ($M = 2.50$, $SD = 1.46$) and learning value of Wikis ($M = 3.16$, $SD=1.63$); $t(31) = -2.416$, $p = .02$.

- *Pair 8– Personal Preference for Blogs and the Learning Value of Blogs*

A paired-samples t-test was conducted to compare the personal preference for Blogs and the learning value of Blogs. There was no significant difference in the scores for personal preference for Blogs ($M = 2.70$, $SD = 1.74$) and learning value of Blogs ($M = 3.15$, $SD=1.70$); $t(32) = -1.671$, $p = .105$.

- *Pair 9- Personal Preference for Multiple Choice Questions and the Learning Value of Multiple Choice Questions*

A paired-samples t-test was conducted to compare the personal preference for Multiple Choice Questions and the learning value of Multiple Choice Questions. There was a significant difference in the scores for personal preference for Multiple Choice Questions ($M = 5.37$, $SD = .88$) and learning value of Multiple Choice Questions ($M = 4.89$, $SD = 1.28$); $t(34) = 2.928$, $p = .006$.

- *Pair 10 - Personal Preference for Matching Questions and the Learning Value of Matching Questions*

A paired-samples t-test was conducted to compare the personal preference for

Matching Questions and the learning value of Matching Questions. There was no significant difference in the scores for personal preference for Matching Questions ($M = 5.06$, $SD = 1.24$) and learning value of Matching Questions ($M = 4.81$, $SD = 1.39$); $t(35) = 1.464$, $p = .152$.

- *Pair 11 - Personal Preference for True-False Questions and the Learning Value of True-False Questions*

A paired-samples t-test was conducted to compare the personal preference for True-False Questions and the learning value of True-False Questions. There was no significant difference in the scores for personal preference for Matching Questions ($M = 4.67$, $SD = 1.54$) and learning value of Matching Questions ($M = 4.46$, $SD = 1.48$); $t(38) = 1.034$, $p = .308$.

- *Pair 12 - Personal Preference for Fill-in-the-Blank Questions and the Learning Value of Fill-in-the-Blank Questions*

A paired-samples t-test was conducted to compare the personal preference for Fill-in-the-Blank Questions and the learning value of Fill-in-the-Blank Questions. There was a significant difference in the scores for personal preference for Fill-in-the-Blank Questions ($M = 3.87$, $SD = 1.82$) and learning value of Fill-in-the-Blank Questions ($M = 4.46$, $SD = 1.48$); $t(38) = -2.113$, $p = .041$.

- *Pair 13 - Personal Preference for Listing Questions and the Learning Value of Listing Questions*

A paired-samples t-test was conducted to compare the personal preference for Listing Questions and the learning value of Listing Questions. There was no significant difference in the scores for personal preference for Listing Questions ($M = 3.87$, $SD =$

1.53) and learning value of Listing Questions ($M = 4.13$, $SD = 1.38$); $t(37) = -1.281$, $p = .208$.

- *Pair 14 - Personal Preference for Short Answer Questions and the Learning Value of Short Answer Questions*

A paired-samples t-test was conducted to compare the personal preference for Short Answer Questions and the learning value of Short Answer Questions. There was no significant difference in the scores for personal preference for Short Answer Questions ($M = 4.41$, $SD = 1.39$) and learning value of Short Answer Questions ($M = 4.79$, $SD = 1.15$); $t(38) = -1.806$, $p = .079$.

- *Pair 15 - Personal Preference for Essay/Discussion Questions and the Learning Value of Essay/Discussion Questions*

A paired-samples t-test was conducted to compare the personal preference for Essay/Discussion Questions and the learning value of Essay/Discussion Questions. There was a significant difference in the scores for personal preference for Essay/Discussion Questions ($M = 3.75$, $SD = 1.66$) and learning value of Essay/Discussion Questions ($M = 4.55$, $SD = 1.54$); $t(39) = -3.323$, $p = .002$.

Table 4.10: Paired Samples t-test of Mean Personal Preferences for and Learning Value of Assessment Techniques

Pair Number and Technique	<i>t</i>	df	<i>p</i>
1. Reflection/Issue Papers	-.942	41	.352
2. Journal Article Reviews	-2.440	40	.019
3. Research Papers	-4.473	41	<.001
4. Group Papers/Portfolios	-2.233	40	.031
5. Journals	-4.886	39	<.001
6. Discussion Boards	-2.010	39	.051

Table 4.10 (continued)

Pair Number and Technique	<i>t</i>	df	<i>p</i>
7. Wikis	-2.416	31	.022
8. Blogs	-1.671	32	.105
9. Multiple Choice Questions	2.928	34	.006
10. Matching Questions	1.464	35	.152
11. True-False Questions	1.034	38	.308
12. Fill-in-the-Blank Questions	-2.113	38	.041
13. Listing Questions	-1.281	37	.208
14. Short Answer Questions	-1.806	38	.079
15. Essay/Discussion Questions	-3.323	39	.002

Research Question Four

What is the relationship between student's personal preference for and perceived learning value of various types of online assessments?

- *Pair 1 – Personal Preference for Reflection/Issue Papers and the Learning Value of Reflection/Issue Papers.*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Reflection/Issue Papers and the learning value of Reflection/Issue Papers. There was a positive correlation between the two variables, $r = 0.346$, $n = 42$, $p = 0.025$.

- *Pair 2 – Personal Preference for Journal Article Reviews and the Learning Value of Journal Article Reviews.*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Journal Article Reviews and the learning value of Journal Article Reviews. There was a positive correlation between the two variables, $r = 0.596$, $n = 41$, $p = 0.000$. Overall, there was a strong, positive correlation

that increases in the personal preference ranking for Journal Article Reviews were correlated with increases in the learning value ranking of Journal Article Reviews.

- *Pair 3 – Personal Preference for Research Papers and the Learning Value of Research Papers*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Research Papers and the learning value of Research Papers. There was a positive correlation between the two variables, $r = 0.516$, $n = 42$, $p = 0.000$.

- *Pair 4– Personal Preference for Group Papers/Portfolios and the Learning Value of Group Papers/Portfolios*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Group Papers/Portfolios and the learning value of Group Papers/Portfolios. There was a positive correlation between the two variables, $r = 0.627$, $n = 41$, $p = 0.000$.

- *Pair 5 – Personal Preference for Journals and the Learning Value of Journals*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Journals and the learning value of Journals. There was a positive correlation between the two variables, $r = 0.383$, $n = 40$, $p = 0.015$.

- *Pair 6– Personal Preference for Discussion Boards and the Learning Value of Discussion Boards*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Discussion Boards and the learning value of

Discussion Boards. There was a positive correlation between the two variables, $r = 0.648$, $n = 40$, $p = 0.000$.

- *Pair 7– Personal Preference for Wikis and the Learning Value of Wikis*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Wikis and the learning value of Wikis.

There was a positive correlation between the two variables, $r = 0.509$, $n = 32$, $p = 0.003$.

- *Pair 8– Personal Preference for Blogs and the Learning Value of Blogs*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Blogs and the learning value of Blogs.

There was a positive correlation between the two variables, $r = 0.587$, $n = 33$, $p = 0.000$.

- *Pair 9– Personal Preference for Multiple Choice Questions and the Learning Value of Multiple Choice Questions*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Multiple Choice Questions and the learning value of Multiple Choice Questions. There was a positive correlation between the two variables, $r = 0.642$, $n = 35$, $p = 0.000$.

- *Pair 10– Personal Preference for Matching Questions and the Learning Value of Matching Questions*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Matching Questions and the learning value of Matching Questions. There was a positive correlation between the two variables, $r = 0.702$, $n = 36$, $p = 0.000$.

- *Pair 11– Personal Preference for True-False Questions and the Learning Value of True-False Questions*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for True-False Questions and the learning value of True-False Questions. There was a positive correlation between the two variables, $r = 0.666$, $n = 39$, $p = 0.000$.

- *Pair 12– Personal Preference for Fill-in-the-Blank Questions and the Learning Value of Fill-in-the-Blank Questions*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Fill-in-the-Blank Questions and the learning value of Fill-in-the-Blank Questions. There was a positive correlation between the two variables, $r = 0.460$, $n = 39$, $p = 0.003$.

- *Pair 13– Personal Preference for Listing Questions and the Learning Value of Listing Questions*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Listing Questions and the learning value of Listing Questions. There was a positive correlation between the two variables, $r = 0.624$, $n = 38$, $p = 0.000$.

- *Pair 14 – Personal Preference for Short Answer Questions and the Learning Value of Short Answer Questions*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Short Answer Questions and the learning

value of Short Answer Questions. There was a positive correlation between the two variables, $r = 0.425$, $n = 39$, $p = 0.003$.

- *Pair 15 – Personal Preference for Essay/Discussion Questions and the Learning Value of Short Essay/Discussion Questions*

A Pearson product-moment correlation coefficient was computed to assess the relationship between personal preference for Essay/Discussion Questions and the learning value of Essay/Discussion Questions. There was a positive correlation between the two variables, $r = 0.548$, $n = 40$, $p = 0.000$.

Table 4.11: Correlations between Personal Preference for and Learning Value of Assessment Techniques.

Pair Number and Technique	Pearson Correlation		Sig. (2-tailed)
	<i>r</i>	<i>n</i>	<i>p</i>
1. Issue Papers	.346	42	.025
2. Journal Article Reviews	.596	41	<.001
3. Research Papers	.516	42	<.001
4. Group Papers/Portfolios	.627	41	<.001
5. Journals	.383	40	.015
6. Discussion Boards	.648	40	<.001
7. Wikis	.509	32	.003
8. Blogs	.587	33	<.001
9. Multiple Choice Questions	.642	35	<.001
10. Matching Questions	.702	36	<.001
11. True-False Questions	.666	39	<.001
12. Fill-in-the-Blank Questions	.460	39	.003
13. Listing Questions	.624	38	<.001
14. Short Answer Questions	.465	39	.003
15. Essay/Discussion Questions	.548	40	<.001

CHAPTER 5: DISCUSSION AND CONCLUSIONS

Introduction

Internet technology has led to an explosion of online college courses and degree programs offered online over the past decade (Allen & Seaman, 2014). How students are assessed in these online courses is one element that affects their overall performance in the course. The purpose of this study was to research the attitudes and opinions of online criminal justice students regarding fifteen assessment techniques commonly used in online courses. The distinction between personal preference and learning value variables for each assessment technique adds a new element into the research that has probably not been used before. The goal of the study was to find those four to six assessment techniques the online criminal justice students surveyed rated highest for personal preference and learning value. Since this study asks students to rate both their personal preference for and the learning value of these assessment techniques, the results can be used to improve future online learning experiences for both students and faculty.

Additionally, a better online learning experience can result in higher student persistence and retention rates in future online courses. By knowing the assessment techniques online students personally prefer and learn the most from, colleges and universities can develop new strategies to increase student persistence and retention rates in online courses, which have traditionally been lower than student persistence in face-to-face courses. While this study is limited to undergraduate criminal justice students at a single university, it is hoped that the survey and procedures used in the study can

ultimately be used to conduct the similar research in other academic disciplines, at differing levels of education, and with both undergraduate and graduate students.

Overview of Research Methods

The study involved the use of a quantitative, online survey in which respondents were asked to rate fifteen assessment techniques they had encountered in their online courses from 1 to 6. The respondents rated each of the fifteen online assessment techniques based on their personal preference for and the learning value of each assessment technique. The participants were also asked to rank their top three of the fifteen assessment techniques both for personal preference and learning value. The sample for the survey included college student enrolled in the online Bachelor's of Science Degree program in Police Studies, online Bachelor's of Science Degree program in Correctional and Juvenile Justice Studies, on-campus Bachelor's of Science Degree program in Criminal Justice, on-campus Bachelor's of Science Degree program in Police Studies, or online Bachelor's of Science Degree program in Homeland Security at Eastern Kentucky University.

The research questions for this study were as follows:

1. What are the student's mean ratings and rank order of their personal preference for each type of online assessment?
2. What are the student's mean ratings and rank order of perceived learning value for each type of online learning assessment?
3. Are there differences between student's ratings of their personal preference for and perceived learning value of various types of online assessments?

4. What is the relationship between student's personal preference for and perceived learning value of various types of online assessments?

From the research questions the following null hypotheses emerged:

1. There are no significant differences between student's personal preference for and perceived learning value of various types of online assessments.

2. There are no significant relationships between student's personal preference for and perceived learning value of various types of online assessments.

Summary of Study Findings

The summary of the research will look at three primary areas. First the summary will discuss the top five highest ranked assessment techniques based on Learning Value. Those five assessment techniques include Reflection/Issue Papers, Multiple Choice Questions, Short Answer Questions, and Discussion Boards. It is worth noting that four of these five assessment techniques also ranked in the top five highest rankings for personal preference. Only discussion boards ranked outside of the top five assessment techniques for personal preference, coming in as the sixth highest ranked assessment for personal preference. Second, the summary will look at the variety of assessment techniques that come from the top six ranked assessment techniques based on personal preference and learning value. Third, the summary will look at the lower ranked assessments based on personal preference and learning value to examine why they may have ranked as low as they did. Fourth, the summary will examine significant differences between each assessment techniques' personal preference rating and learning value

rating. Finally, the summary will examine significant relationship between each assessment techniques' personal preference rating and learning value rating.

Higher Rated Assessment Techniques

Reflection/Issue Papers

Reflection/ Issue Papers were a popular form of assessment with the highest mean ranking of all assessment techniques for learning value ($M = 4.95$) and ranking third highest mean ranking for personal preference ($M = 4.77$). Reflection/Issue papers also ranked third (16) in the total number times it was listed in the students' top three assessment techniques for personal preference. This indicates that students may prefer writing shorter reflection/issue papers over a variety of topics instead of writing one long research paper over a single topic. Writing reflection/issue papers is form of formative assessment in two ways. First, writing a series of shorter reflection/issue papers fits with the concept of formative assessment because the point value of each paper is normally much lower than a single, high-stakes research paper. Secondly, writing multiple reflection/issue papers throughout the semester also allows students to take the feedback they receive on each paper and work to improve their writing over the course of the semester.

Multiple Choice Questions

Multiple Choice questions were also a popular form of assessment with the highest mean ranking of all assessment techniques for personal preference ($M = 5.32$) and ranking second highest for learning value ($M = 4.92$). Multiple choice questions ranked first (30) in the total number times it was listed in the students' top three assessment techniques for personal preference and first (18) for the total number of times it was

listed in the students' top three assessment techniques for learning value. While ranking high among the student participant in the study, many faculty feel that multiple choice questions only test lower order thinking skills and will only use them to test student knowledge of facts (Schuwirth & van der Vlugten, 2003). However, well-constructed multiple choice questions can test more than simple facts (Schuwirth & van der Vlugten, 2003) and the researcher suggest that online faculty not simply reject or limit multiple choice questions outright. Instead, online faculty should consider learning how to create better multiple choice questions that test students' higher order thinking skills (Piontek, 2008).

Short Answer Questions

Short answer questions were the third highest mean ranked assessment technique based on learning value ($M = 4.83$) and the fifth highest ranked assessment technique based on personal preference ($M = 4.50$). Short answer questions also ranked in a tie for fourth (12) in the total number times it was listed in the students' top three assessment techniques for personal preference. Short answer questions are open response questions that are flexible and a widely accepted form of assessment question (Schuwirth & van der Vlugten, 2003). Research suggests that short answer questions are superior to other commonly use exam questions. Unlike short answer questions, students can guess on multiple choice, matching, and true-false questions (Maxwell, 2010). On timed exams, short answer questions are preferable to multiple, discussion/essay questions which can cause students to rush when constructing their answers and not engage in meaningful analysis. It appears that a good combination of short answer questions and well-written, multiple choice questions make for a quality exam. Short answer questions are more open

and more flexible, but with less reliability than well-written, multiple choice questions (Piontek, 2008).. At the same time, well-written, multiple-choice questions assess in a clearer, more focused manner than short answer questions.

Matching Questions

Matching questions were the fourth highest ranked assessment technique based on learning value ($M = 4.74$) and the second highest ranked assessment technique based on personal preference ($M = 4.98$). Matching questions also ranked in a tie for fourth (12) in the total number times it was listed in the students' top three assessment techniques for personal preference and third (13) in the total number of times it was listed in the students' top three assessment techniques for learning value. Matching questions are a special form of multiple choice questions where many questions share a larger group of answer options (Oosterhof et al., 2008). Many of the issues of poor question construction and student guessing affecting multiple choice questions also apply to matching questions.

Discussion Boards

Finally, discussion boards were the fifth highest ranked assessment technique based on learning value ($M = 4.67$) and sixth highest ranked assessment technique based on personal preference ($M = 4.30$). Discussion boards also ranked second (21) in the total number times it was listed in the students' top three assessment techniques for personal preference and second (16) in the total number of times it was listed in the students' top three assessment techniques for learning value. It was definitely the highest ranked interactive assessment technique far surpassing blogs and wikis.

It is suggested that online students need to feel connected to, and not isolated from online courses (McIssac & Craft, 2003). Discussion boards have become a popular (Kearns, 2012) and effective (Gaytan & McEwen , 2007) form of online assessment. Students value discussions that happen in well-structured, asynchronous discussion board (Vonderwell et al., 2007). So online instructors should always remember that good student feedback and a sense of instructor is participation in the discussion is vital to a quality discussion board that has high levels of student interaction (Kelly, 2014; Meyer, 2006; Sebastianelli & Tamimi, 2011).

Variety of Assessment Techniques

The Online Assessment section of the Literature Review in Chapter 3 suggested online faculty use a variety of assessment techniques in order to affectively assess students in their online courses (Dikli, 2003; Paloff & Pratt, 2009). A review of the top six ranked assessment techniques in this study based on their Learning Value (LV) represents assessments from Written Assessments (Reflection/Issue Papers), Interactive Assessments (Discussion Boards), Fixed-response Questions (Multiple Choice and Matching Questions), and Constructed response Questions (Short Answer and Essay/Discussion Questions). A similar review of the top six ranked assessment techniques based on Personal Preference (PP) also shows representation of assessments from Written Assessments (Reflection/Issue Papers), Interactive Assessments (Discussion Boards), Fixed-response Questions (Multiple Choice, Matching, and True-False Questions), and Constructed-response Questions (Short Answer Questions). It is possible for online faculty to implement the top ranked techniques from the study results

into their online courses and continue to provide a variety of assessment techniques for the students.

Lower Rated Assessment Techniques

Blogs and Wikis

Blogs, Wikis, and Group Projects/Portfolios ranked in the bottom four in the categories mean rating for personal preference, mean rating of learning value, rank in the top three for personal preference, and rank in the top three for learning value that were measured in Research Questions 1 and 2.

A deeper look into data shows the lowest N values for all assessment techniques in the study were for blogs and wikis. Blogs received a mean score for learning value of 3.15 with an N of 33 and a mean score for personal preference of 2.79 with an N of 39. Meanwhile, wikis received a mean score for learning value of 3.16 with an N of 32 and a mean score for personal preference of 2.64 with an N of 36. This indicates that more students answered “not applicable” to questions about wikis and blogs than other assessment techniques in the study. Since students were asked to select “not applicable” for assessment techniques they had not experienced, this could mean online faculty are not using wikis and blog in their online courses for student interactivity. Instead they are opting for the discussion board tool, which was one of the first online tools in available in online course management systems (Eggleston, 2011). Faculty reliance on discussion boards may have led to under use of wikis and blogs and under exposure of these online learning tools to online students.

Group Projects/Portfolios

Group papers/portfolios were the lowest ranked assessment technique in for both personal preference and learning value. Group projects/portfolios received a mean score for personal preference of 2.41 and a mean score for learning values of 2.90. These numbers seem to be counter to those high ratings group work received in the studies contained in the literature review. Maybe students involved in group work are too concerned with the grade they receive compared to how much everyone in the group contributes, and do not fully comprehend the skills they gain by having to work together with others, which will benefit them in the long term outside of college. Perhaps online faculty are concerned about explaining the group project and its scoring rubric, and do not take time to explain the external benefits of working together to their online students. Further qualitative research certainly could be conducted regarding group project/portfolios to determine why they rate so low among students, yet are applauded by assessment experts as innovative assessment techniques that deal with real issues and require students to develop and reflect on their work over a period of time (Keeler, 1997; Robinson, 2000; Slater, 1996).

Significant Differences

Research question 3 asked “are there differences between student’s personal preference for and rating of the learning value of various types of online assessments?” This resulted in a null hypothesis that stated “there are no significant differences between student’s personal preference for and rating of the learning value of various types of online assessments.” The alternative hypothesis stated “there were significant differences between some of the online assessment techniques.” Paired samples t-test were run comparing each assessment technique’s mean rating for personal preference to its

corresponding mean rating for learning value. Significance was determined by comparing the p-value to $\alpha = .05$.

The data indicated no significant differences in the personal preference mean and the learning value mean for Reflection/Issue Papers ($t(41) = -.942, p = .352$), Discussion Boards ($t(39) = -2.010, p = .051$), Blogs ($t(32) = -1.671, p = .105$), Matching Questions ($t(35) = 1.464, p = .152$), True-False Questions ($t(38) = 1.034, p = .308$), Listing Questions ($t(37) = -1.281, p = .208$), and Short Answer Questions ($t(38) = -1.806, p = .079$). The data did, however, indicate significant differences in the personal preference mean and the learning value mean for Journal Article Reviews ($t(40) = -2.44, p = .019$), Research Papers ($t(41) = -4.47, p < .001$), Group Papers/Portfolios ($t(40) = -2.233, p = .03$), Journals ($t(39) = -4.886, p < .001$), Wikis ($t(31) = -2.416, p = .02$), Multiple Choice Questions ($t(34) = 2.928, p = .006$), Fill-in-the-Blank Questions ($t(38) = -2.113, p = .04$), and Essay/Discussion Questions ($t(39) = -3.323, p = .002$). The most significant differences between personal preference mean ratings and learning value mean ratings came from Journals and Research Papers. These results allow us to confirm the alternate hypothesis and reject the null hypothesis.

Significant Relationships

Research question 4 asked “what is the relationship between student’s personal preference for and rating of the learning value of various types of online assessments?” This resulted in a null hypothesis that stated “there will be no significant relationships between student’s personal preference for and rating of the learning value of various types of online assessments” The alternative hypothesis stated “there will be significant

relationships between student's personal preference for and rating of the learning value of various types of online assessments." Bivariate correlations were run assessing each assessment technique's personal preference rating with its learning value rating. Significance was determined by comparing the p-value to $\alpha = .05$.

The data indicated significant, positive correlations with every assessment technique at the .05 level. The strongest correlations, in descending order, are Matching Questions ($r = .702$, $n = 36$, $p < .001$), True-False Questions ($r = .666$, $n = 39$, $p < .001$), Discussion Boards ($r = .648$, $n = 40$, $p < .001$), Multiple Choice Questions ($r = .642$, $n = 35$, $p < .001$), Group Papers/Portfolios ($r = .627$, $n = 41$, $p < .001$), Listing Questions ($r = .624$, $n = 38$, $p < .001$), Journal Article Reviews ($r = .596$, $n = 41$, $p < .001$), Blogs ($r = .587$, $n = 33$, $p < .001$), Discussion/Essay Questions ($r = .548$, $n = 40$, $p < .001$), and Research Papers ($r = .516$, $n = 42$, $p < .001$). Weaker correlations with significance levels above .001 include Wikis ($r = .509$, $n = 32$, $p = .003$), Short Answer Questions ($r = .465$, $n = 39$, $p = .003$), Fill-in-the-Blank Questions ($r = .460$, $n = 39$, $p = .003$), Journals ($r = .383$, $n = 40$, $p = .015$), and Issue Papers ($r = .346$, $n = 42$, $p = .025$). These results allow us to confirm the alternate hypothesis and reject the null hypothesis.

Implications for Policy

Administrators and faculty in higher education rely on a plethora of policies in the performance of their jobs. Many will ignore the findings in this work because they rely on other academics and educational experts to guide policy and not the students themselves. This study was meant to give online students a voice in the assessment techniques used in the courses they take and hopefully affect positive change in online courses in the future. While not perfect by any means, it is hoped that this study opens the

eyes of a few administrators and faculty. In the process, perhaps a few doors will also open for online students allowing them to further voice their opinions about online assessment practices in the future.

First, institutions of higher education should survey their online students to obtain their viewpoints on assessment in each college and department. From there they should encourage each college and department to take the data from the survey into account when developing their online courses. This data could lead to new, innovative approaches to assessment for some courses, and validate the assessment technique being used in other courses. For example, based on the data collected for this dissertation an online instructor might move away from assessing students using a single, large research paper. Instead the instructor might begin assessing student writing abilities using a series of shorter reflection/issue papers covering a variety of topics. The students can still be tested on their writing abilities, show their reading comprehension abilities, and be required to conduct research and cite their sources. The benefit for students is that the reflection/issue papers are more of a formative assessment where students can learn from their mistakes on the first reflection/issue paper and improve on the later reflection/issue papers.

Second, institutions of higher education should use this and other research to encourage their online faculty to use a variety of assessment methods when teaching online courses (Dikli, 2003; Paloff & Pratt, 2009). The technology used in online course management systems allow faculty to use a wide variety of assessment techniques (Prineas & Cini, 2011), including the ones in this study's survey, to assess online students. Even a review of the top six rated assessment techniques in this study for personal preference and learning value finds a variety of highly rated assessment from the

areas of Written Assessments, Interactive Assessments, Fixed-response Questions, and Constructed-response Questions.

Suggestions and Implications for Future Research

The information uncovered in this study provides insight to college and universities regarding which online assessment techniques the study participants personally preferred and felt had the highest learning value. However, the study did not investigate the deeper qualitative reasons why the study participants ranked the assessment techniques the way they did. A future mixed methods study should be done that implements the quantitative survey for determining which techniques the participants personally prefer and feel have good learning value, followed up with qualitative interviews of randomly selected participants to determine why the participants chose the ratings for the assessment techniques.

Secondly, the study should be expanded to other majors and colleges. This study was limited to participants who were undergraduate students majoring in common criminal justice majors at a single university in the Appalachia region of Kentucky. Future studies should expand and conduct the study with students in other college majors, attending other universities, from multiple universities, in graduate school programs, or any combination thereof.

Next, the survey in the study was written by the researcher and included fifteen assessment techniques chosen by the researcher. Future research might require modification the survey by adding assessment techniques to or removing assessment techniques from the survey. This could be beneficial because different college majors may not engage in the same techniques the researcher included in the present survey.

Additionally, some assessment techniques not included in the present research survey may be prevalent in other majors and may need to be added if students in those majors are surveyed.

Finally, the design and/or wording of the survey used in the study should be modified in the future to make it more effective, easier to read, and simpler for participants to follow directions for completing the instrument. The survey in the study had 52 total respondents, but only 42 respondents who were able to fill it out completely. This indicates that 19% of respondents failed to complete the survey once they began taking it. Such a high failure rate indicates room for improvement in the wording and design of the survey.

Concluding Thoughts

Whether you call it online education or e-learning, the Internet has brought in a new type of college student who may not have been able to obtain a college degree in the past. With the recent explosion in institutions of higher education offering online courses and degree programs, it is apparent that the institutions must get to know this new breed of college student who does not come to campus and relies heavily on Internet technology. Colleges should make sure these online students have the computer skills to take online courses. It is incumbent upon colleges to provide support that ensures students have adequate computer skills prior to taking online course. Additionally, institutions of higher education must guarantee that their online faculty are properly trained to deal with the unique assessment, course design, and feedback issues that arise in online courses. Colleges and universities offering online courses are only as good as the faculty who teach the courses for them. Well-trained, online faculty can bring a

college or university a reputation for providing high-quality, online courses to its online students.

College students' are constantly surveyed by institutions of higher learning and asked for their opinions on various non-course related issues that generally improve their college experience. With student opinions being so valued by these institutions of higher learning, they should also genuinely show an interest in how their online students view assessment techniques and take those viewpoints into consideration when developing future online courses and course policies. Colleges and universities that value input from their online students on issues like online assessment, course design, and instructor quality will improve the quality of their online courses and degree programs. This, in turn, can lead to improved persistence rates and a better overall learning experience for their online students.

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APPENDIX A:
Cover Letter and Consent Form

Cover Letter

Dear Participant:

You are being invited to take part in a research study of attitudes of online students regarding online assessment techniques. Students chosen for the study are online students majoring in either one of the Bachelor degree programs in the College of Justice and Safety at Eastern Kentucky University. The study is entitled “Exploring the Attitudes of Criminal Justice Students Regarding Assessment Techniques in Online Courses.” The person in charge of this study is Terry Allen Taylor at Eastern Kentucky University. He is being guided in this research by Dr. Charles Hausman. You can access the survey by clicking on the following link: <https://www.surveymonkey.com/s/3ZK6282>

The purpose of the study is investigate student attitudes regarding fifteen online assessment techniques to determine which of the online assessment techniques students personally prefer(Personal Preference), and which of the online assessment techniques students learn the most and least from(Learning Value). By executing this study, I hope to learn how high online assessment techniques rate with regard to their personal preference and learning value.

A possible direct benefit of this research will be to provide colleges and their online faculty with information that can help them improve future online courses by offering improved assessments that student both like and learn from. An indirect benefit of this research can be to reduce attrition rates in online courses. When students enjoy their online courses because of its improved assessments, they will be more likely to complete those online courses.

The research procedures will be conducted online via an online survey. A link to the survey will be contained in the invitation email sent to students. The total amount of time necessary to complete the survey will be less than 15 minutes. The survey link will remain open until June 6th.

Page 1 of the survey will collect demographic information regarding your gender, race, age, degree program, and primary reason for taking online courses.

Page 2 of the survey participants will be asked to rate their personal preference for each of the fifteen online assessment techniques in a Likert style survey. This will be followed by a question asking participants to order rank the top three online assessment techniques they personally prefer.

Page 3 of the survey participants will be asked to rate the learning value for each of the fifteen online assessment techniques in a Likert style survey. This will be followed by asking participants to order rank the top three online assessment techniques they feel provide the most learning value to them.

The fifteen online assessment techniques include Reflection/Issue Papers, Journal Article Reviews, Research Papers, Group Papers/Portfolios, Journals, Discussion Boards, Wikis, Blogs, Multiple Choice Questions, Matching Questions, True-False Questions, Fill in the Blank Questions, Listing Questions, Short Answer Questions, and Discussion/Essay Questions.

By completing the survey, you are providing consent to use your data in the research.

You can access the survey by clicking on the following link:

<https://www.surveymonkey.com/s/3ZK6282>

If you are under the age of 18 or if you have not taken any online courses, then you should not take part in this study. To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. You will not get any monetary benefit from taking part in this study. In the future, students and faculty may benefit from improved online courses that use assessments that are both preferred by students and which have high learning values. If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. If you do not want to be in the study, you can simply not take part in the study. There are no costs associated with taking part in this study. You will not receive any payment or reward for taking part in this study.

This study is anonymous. That means that no one, not even principal investigator, will know that the information you give came from you. Your anonymous information will be combined with anonymous information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about this combined information. You will not be identified in these written materials.

No personally identifiable information (like the name of the respondent, address of the house) will be recorded on and collected by the survey instrument. All results will be reported at the aggregate level.

The data collected will be maintained by the P.I. in a locked safe in the P.I.'s home. The electronic media on which the data are downloaded will be password protected. Data will be maintained for three years after the conclusion of the research. At the conclusion of the project, all electronic files will be deleted and all paper files will be shredded.

If you decide to take part in the study, you have the right to decide at any time that you no longer want to participate. You will not be treated differently if you decide to stop taking part in the study. The individuals conducting the study may need to end your participation in the study. They may do this if you are not able to follow the directions they give you, if they find that your being in the study is more risk than benefit to you, or if the agency funding the study decides to stop the study early for a variety of scientific reasons.

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Terry Allen Taylor at 256-366-5758. If you have any questions about your rights as a research volunteer, contact the staff in the Division of Sponsored Programs at Eastern Kentucky University at 859-622-3636. We will give you a copy of this consent form to take with you.

Thank you for your time and consideration. Again, you can access the survey by clicking on the following link: <https://www.surveymonkey.com/s/3ZK6282>

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Sincerely,

Terry Taylor, J.D./M.S.C.J
Eastern Kentucky University
Doctor of Education Student

APPENDIX B:
Survey of Assessment

EXPLORING THE ATTITUDES OF CRIMINAL JUSTICE STUDENTS REGARDING ASSESSEMENT ...

Terry Allen Taylor

Why am I being asked to participate in this research?

You are being invited to take part in a research study of attitudes of online students regarding online assessment techniques, particularly online students majoring in either the online Bachelor's of Police Studies Degree program or the online Bachelor's of Corrections and Juvenile Justice Degree program at Eastern Kentucky University. You are being invited to participate in this research study because you are an online student in the College of Justice and Safety student at Eastern Kentucky University who is majoring in either the online Bachelor's of Police Studies Degree program or the online Bachelor's of Corrections and Juvenile Justice Degree program. If you take part in this study, you will be one of about 200 people to do so.

Who is doing the study?

The person in charge of this study is Terry Allen Taylor at Eastern Kentucky University. He is being guided in this research by Dr. Charles Hausman. There may be other people on the research team assisting at different times during the study.

What is the purpose of the study?

The purpose of the study is investigate student attitudes regarding fifteen online assessment techniques to determine which of the online assessment techniques students personally prefer(Personal Preference), and which of the online assessment techniques students learn the most and least from(Learning Value).

By doing this study, we hope to learn what online assessment techniques rate high for personal preference and learning value by online students. A possible direct benefit of this research will be to provide colleges and their online faculty with information that can help them improve online courses by offering improved assessments that student both like and learn from. An indirect benefit of this research can be to reduce attrition rates in online courses because when students like the online course because of its improved assessments they may be more likely to complete the online course.

Where is the study going to take place and how long will it last?

The research procedures will be conducted online via an online survey that you will be taken to by clicking on the link provided in the email sent to students. The total amount of time necessary to complete the survey will be less than 20 minutes. The survey link will remain open for four weeks beginning on April 1 , 2014 remaining open until 11:00 pm on April 28, 2014.

What will I be asked to do?

In Section 1 of the survey will collect some demographic information regarding participants' gender, race, age, degree program, number of online courses taken, primary reason for taking online courses

In Section 2 of the survey participants will be asked to rate their personal preference(PP) for each of the fifteen online assessment techniques in a Likert style survey . This will be followed by asking participants to order rank the top five online assessment techniques they personally prefer.

In Section 3 of the survey participants will be asked to rate the learning value (LV) for each of the fifteen online assessment techniques in a Likert style survey . This will be followed by asking participants to order rank the top five online assessment techniques they feel provide the most learning value to them.

The fifteen online assessment techniques include Reflection/Issue Papers, Journal Article Reviews, Research Papers, Group Papers/Portfolios, Journals, Discussion Boards, Wikis, Blogs, Multiple Choice Questions, Matching Questions, True-False Questions, Fill in the Blank Questions, Listing Questions, Short Answer Questions, and Discussion/Essay Questions.

1. Are there reasons why I should not take part in this study?

If you are under the age of 18 you should not take part in this study.

What are the possible risks and discomforts?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

Will I benefit from taking part in this study?

You will not get any monetary benefit from taking part in this study. In the future, students and faculty may benefit from improved online courses that use assessments that are both preferred by students and which have high learning values.

Do I have to take part in this study?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

If you do not want to be in the study, you can simply not take part in the study.

What will it cost me to participate?

There are no costs associated with taking part in this study.

Will I receive any payment or rewards for taking part in the study?

You will not receive any payment or reward for taking part in this study.

Who will see the information I give?

This study is anonymous. That means that no one, not even members of the research team, will know that the information you give came from you. Your anonymous information will be combined with anonymous information from other people taking part in the study. When we write up the study to share it with other researchers, we will write about this combined information. You will not be identified in these written materials.

Can my taking part in the study end early?

If you decide to take part in the study, you still have the right to decide at any time that you no longer want to participate. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to end your participation in the study. They may do this if you are not able to follow the directions they give you, if they find that your being in the study is more risk than benefit to you, or if the agency funding the study decides to stop the study early for a variety of scientific reasons.

What if I have questions?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Terry Allen Taylor at 256-366-5758. If you have any questions about your rights as a research volunteer, contact the staff in the Division of Sponsored Programs at Eastern Kentucky University at 859-622-3636. We will give you a copy of this consent form to take with you.

What else do I need to know?

I have thoroughly read this document, understand its contents, have been given an opportunity to have my questions answered, and agree to participate in this research project.

IF YOU DO NOT WISH TO TAKE THE SURVEY, CLICK THE EXIT SURVEY BUTTON AT THE TOP OF THE PAGE.

[Click Here and Select the Next Button below to take the survey](#)

2. Personal Information

Please enter the answers that best describe you and your learning experiences.

***What is your gender?**

- Female
 Male

***What is your age?**

- 18 to 24
 25 to 34
 35 to 44
 45 to 54
 55 and Older

***What is your race? Mark one or more.**

- White
 Black or African American
 Asian
 Native Hawaiian or Other Pacific Islander
 American Indian or Alaska Native
 Other

***What is/was your primary reason for taking online course(s)?**

- Distance to Campus
 Convenience/Flexibility
 Family Responsibilities
 Work Responsibilities
 Learning Preference/Comfort

Other (please specify)

***Which online program are (were) you majoring in?**

- Homeland Security Online Degree Program
- Criminal Justice Degree On-Campus (took one or more online criminal justice/police studies course)
- Police Studies Degree On-Campus (took one online or more criminal justice/police studies course)
- Police Studies Online Degree Program
- Correctional and Juvenile Justice Studies Online Degree Program

Student Preferred Online Assessment Techniques - Written Assessments

***7. Student Attitudes Towards Online Assessment - PERSONAL PREFERENCE**

The following questions ask about the online assessment techniques you personally prefer in your online courses. This is strictly about your personal preference for a particular assessment methods, regardless of how much learning value the assessment methods may have.

For each assessment method you are asked to rate your level of disagreement or agreement that you personally prefer the particular assessment method. The survey requires an answer for each question. If you have not experienced a particular assessment methods during the courses of your online studies, please answer Not Applicable so as to not flaw the research data being gathered.

	Strongly Disagree(1)	Disagree(2)	Somewhat Disagree(3)	Somewhat Agree(4)	Agree(5)	Strongly Agree (6)	Not Applicable
I prefer Issue Papers for assessment. (2-5 pages) - short research papers.	<input type="radio"/>						
I prefer Journal Article Reviews for assessment (1 – 2 pages) .	<input type="radio"/>						
I prefer Research Papers for assessment (10+ pages) – lengthy research papers.	<input type="radio"/>						
I prefer Group Papers / Portfolios with Other Students.	<input type="radio"/>						
I prefer Journals - maintained over the course of the semester for assessment.	<input type="radio"/>						
I prefer Discussion Boards for assessment	<input type="radio"/>						
I prefer Wikis for assessment	<input type="radio"/>						
I prefer Blogs for assessment	<input type="radio"/>						
I prefer Multiple Choice Questions for assessment	<input type="radio"/>						
I prefer Matching Questions for assessment	<input type="radio"/>						
I prefer True-False/ Either-Or Questions for assessment	<input type="radio"/>						
I prefer Fill-in-the-Blank Questions for assessment	<input type="radio"/>						
I prefer Listing Questions for assessment	<input type="radio"/>						
I prefer Short Answer Questions for assessment	<input type="radio"/>						
I prefer Essay/Discussion	<input type="radio"/>						

Questions for assessment

8. Please rank the top 3 assessment techniques based on your personal preference.

	Number 1	Number 2	Number 3
Top 3 Assessment Techniques Based on Personal Preference	<input type="text"/>	<input type="text"/>	<input type="text"/>

Student Attitudes Towards Online Assessment - LEARNING VALUE

***9. Student Attitudes Towards Online Assessment - LEARNING VALUE**

The following questions ask about the online assessment techniques/ questions you learn the most from in your online courses. This is strictly about the learning value you have for a particular assessment method or type of question, regardless of how much you personally prefer the assessment method or question.

For each assessment method / type of question you are asked to rate your level of disagreement or agreement that you feel the particular assessment method provides good learning value. The survey requires an answer for each question. If you have not experienced a particular assessment method during the courses of your online studies, please answer Not Applicable so as to not flaw the research data being gathered.

	Strongly Disagree(1)	Disagree(2)	Somewhat Disagree(3)	Somewhat Agree(4)	Agree(5)	Strongly Agree (6)	Not Applicable
Issue Papers (2-5 pages) - short research papers provide good learning value.	<input type="radio"/>						
Journal Article Reviews (1 – 2 pages) provide good learning value.	<input type="radio"/>						
Research Papers (10+ pages) – lengthy research papers provide good learning value.	<input type="radio"/>						
Group Papers / Portfolios with Other Students provide good learning value. .	<input type="radio"/>						
Journals – Maintained over the course of the semester provide good learning value.	<input type="radio"/>						
Discussion Boards provide good learning value.	<input type="radio"/>						
Wikis provide good learning value.	<input type="radio"/>						
Blogs provide good learning value.	<input type="radio"/>						
Multiple Choice Questions provide good learning value.	<input type="radio"/>						
Matching Questions provide good learning value.	<input type="radio"/>						
True-False/ Either-Or Questions provide good learning value.	<input type="radio"/>						
Fill-in-the-Blank Questions provide good learning value.	<input type="radio"/>						
Listing Questions provide good learning value.	<input type="radio"/>						
	<input type="radio"/>						

Short Answer Questions

provide good learning value.

Essay/Discussion Questions

provide good learning value.

***10. Please rank the top 3 assessment techniques based on their learning value.**

	Number 1	Number 2	Number 3
Top 3 Assessment Techniques Based on Learning Value	<input type="text"/>	<input type="text"/>	<input type="text"/>

**APPENDIX C:
IRB Approval**



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Division of Sponsored Programs

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521 Lancaster Avenue
Richmond, Kentucky 40475-3102
(859) 622-3636; Fax (859) 622-6610
<http://www.sponsoredprograms.eku.edu>

NOTICE OF IRB APPROVAL

Protocol Number: 14-176

Institutional Review Board IRB00002836, DHHS FWA00003332

Review Type: Full Expedited

Approval Type: New Extension of Time Revision Continuing Review

Principal Investigator: **Terry Allen Taylor** Faculty Advisor: **Dr. Charles Hausman**

Project Title: **Exploring the Attitudes of Criminal Justice Students Regarding Assessment Techniques in Online Courses**

Approval Date: **4/4/2014** Expiration Date: **12/31/15**

Approved by: **Dr. Jonathan Gore, IRB Member**

This document confirms that the Institutional Review Board (IRB) has approved the above referenced research project as outlined in the application submitted for IRB review with an immediate effective date.

Principal Investigator Responsibilities: It is the responsibility of the principal investigator to ensure that all investigators and staff associated with this study meet the training requirements for conducting research involving human subjects, follow the approved protocol, use only the approved forms, keep appropriate research records, and comply with applicable University policies and state and federal regulations.

Consent Forms: All subjects must receive a copy of the consent form as approved with the ECU IRB approval stamp. Copies of the signed consent forms must be kept on file unless a waiver has been granted by the IRB.

Adverse Events: Any adverse or unexpected events that occur in conjunction with this study must be reported to the IRB within ten calendar days of the occurrence.

Research Records: Accurate and detailed research records must be maintained for a minimum of three years following the completion of the research and are subject to audit.

Changes to Approved Research Protocol: If changes to the approved research protocol become necessary, a description of those changes must be submitted for IRB review and approval prior to implementation. Some changes may be approved by expedited review while others may require full IRB review. Changes include, but are not limited to, those involving study personnel, consent forms, subjects, and procedures.

Annual IRB Continuing Review: This approval is valid through the expiration date noted above and is subject to continuing IRB review on an annual basis for as long as the study is active. It is the responsibility of the principal investigator to submit the annual continuing review request and receive approval prior to the anniversary date of the approval. Continuing reviews may be used to continue a project for up to three years from the original approval date, after which time a new application must be filed for IRB review and approval.

Final Report: Within 30 days from the expiration of the project, a final report must be filed with the IRB. A copy of the research results or an abstract from a resulting publication or presentation must be attached. If copies of significant new findings are provided to the research subjects, a copy must be also be provided to the IRB with the final report.

Other Provisions of Approval, if applicable: None

Please contact Sponsored Programs at 859-622-3636 or send email to tiffany.hamblin@eku.edu or lisa.royalty@eku.edu with questions about this approval or reporting requirements.

**APPENDIX D:
Revised IRB Approval**



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<http://www.sponsoredprograms.eku.edu>

NOTICE OF IRB APPROVAL

Protocol Number: 14-176

Institutional Review Board IRB00002836, DHHS FWA00003332

Review Type: Full Expedited

Approval Type: New Extension of Time Revision Continuing Review

Principal Investigator: **Terry Allen Taylor** Faculty Advisor: **Dr. Charles Hausman**

Project Title: **Exploring the Attitudes of Criminal Justice Students Regarding Assessment Techniques in Online Courses**

Approval Date: **5/22/2014** Expiration Date: **12/31/15**

Approved by: **Dr. Jonathan Gore, IRB Member**

This document confirms that the Institutional Review Board (IRB) has approved the above referenced research project as outlined in the application submitted for IRB review with an immediate effective date.

Principal Investigator Responsibilities: It is the responsibility of the principal investigator to ensure that all investigators and staff associated with this study meet the training requirements for conducting research involving human subjects, follow the approved protocol, use only the approved forms, keep appropriate research records, and comply with applicable University policies and state and federal regulations.

Consent Forms: All subjects must receive a copy of the consent form as approved with the ECU IRB approval stamp. Copies of the signed consent forms must be kept on file unless a waiver has been granted by the IRB.

Adverse Events: Any adverse or unexpected events that occur in conjunction with this study must be reported to the IRB within ten calendar days of the occurrence.

Research Records: Accurate and detailed research records must be maintained for a minimum of three years following the completion of the research and are subject to audit.

Changes to Approved Research Protocol: If changes to the approved research protocol become necessary, a description of those changes must be submitted for IRB review and approval prior to implementation. Some changes may be approved by expedited review while others may require full IRB review. Changes include, but are not limited to, those involving study personnel, consent forms, subjects, and procedures.

Annual IRB Continuing Review: This approval is valid through the expiration date noted above and is subject to continuing IRB review on an annual basis for as long as the study is active. It is the responsibility of the principal investigator to submit the annual continuing review request and receive approval prior to the anniversary date of the approval. Continuing reviews may be used to continue a project for up to three years from the original approval date, after which time a new application must be filed for IRB review and approval.

Final Report: Within 30 days from the expiration of the project, a final report must be filed with the IRB. A copy of the research results or an abstract from a resulting publication or presentation must be attached. If copies of significant new findings are provided to the research subjects, a copy must be also be provided to the IRB with the final report.

Other Provisions of Approval, if applicable: None

Please contact Sponsored Programs at 859-622-3636 or send email to tiffany.hamblin@eku.edu or lisa.royalty@eku.edu with questions about this approval or reporting requirements.

VITA

Terry A. Taylor
410 Bristol Avenue
New Albany, MS. 38652
256.366.5758
tataylor3108@aol.com

Education

- **Doctor of Education** – Educational Leadership and Policy Studies
Eastern Kentucky University, Richmond, KY., 2014

Dissertation Title: “Exploring the Attitudes of Criminal Justice
Students Regarding Assessment Techniques in Online Courses.”
- **Master of Science.** – Criminal Justice
University of North Alabama, Florence, AL. 2005
- **Juris Doctor** – Law
Birmingham School of Law, Birmingham, AL. 1999
- **Bachelor of Science.** – Criminal Justice and Sociology.
University of North Alabama, Florence, AL. 1995
- **Associates in Applied Science** – Data Processing Technology
Northwest Shoals Community College, Muscle Shoals, AL. 1991

Relevant Experience

Blue Mountain College (Aug. 2014 – Present)
Program Coordinator and Assistant Professor of Criminal Justice

Courses Taught:

- CJ 120 – Intro. to Criminal Justice (Fall 2014)
- CJ 240 – Juvenile Justice (Fall 2014)
- CJ 320 – Criminal Investigations
- CJ 340 – Understanding the Criminal Mind

Somerset Community College

Assistant Professor of Criminal Justice (July 2009 – June 2013)
Instructor of Criminal Justice (Jan. 2007- June 2009)

Courses Taught:

- **CRJ 100 – Intro. to Criminal Justice** (Spring 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013)
- **CRJ 102 – Intro. to Corrections** (Spring 2007, Summer 2007, Fall 2007, Summer 2008, Summer 2009, Summer 2010)
- **CRJ 201 – Intro. to Criminalistics** (Fall 2007, Fall 2008, Fall 2009, Fall 2010,
- **CRJ 202 – Issues and Ethics in CRJ** (Spring 2008, Fall 2009, Spring 2010, Summer 2010, Fall 2010, Spring 2011, Summer 2011, Fall 2011, Spring 2012, Fall 2012, Spring 2013)
- **CRJ 203 – Community Corrections: Probation and Parole** (Spring 2009, Spring 2011)
- **CRJ 204 – Criminal Investigations** (Spring 2007, Spring 2008, Spring 2009, Spring 2010, Spring 2011, Fall 2011)
- **CRJ 208 – Delinquency and Juvenile Justice** (Spring 2007)
- **CRJ 211- Liability and Legal Issues** (Spring 2008, Fall 2008)
- **CRJ 215 – Intro. to Law Enforcement** (Fall 2007, Summer 2008, Spring 2009, Summer 2009, Spring 2010, Fall 2010, Spring 2011, Summer 2011, Fall 2011, Spring 2012, Summer 2012)
- **CRJ 216 – Criminal Law** (Summer 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009, Summer 2009, Fall 2009, Summer 2010, Fall 2010, Summer 2011, Fall 2011, Summer 2012, Fall 2012, Spring 2013)
- **CRJ 217 – Criminal Procedures** (Spring 2010, Spring 2011, Spring 2012, Spring 2013)
- **CRJ 222 – Prison and Jail Administration** (Fall 2008)
- **CRJ 277 – Intro. to Criminology** (Spring 2012, Summer 2012)

University of North Alabama

Adjunct Instructor of Business Law Jan. 2001 - May 2003.

Courses Taught:

- **BL 240 – Legal Environment of Business** (Spring 2002, Spring 2003)
- **BL 380 – Law of Commercial Transactions and Property** (Spring 2001, Fall 2001, Spring 2002, Fall 2002, Spring 2003)
- **BL 381 – Business Law for Entrepreneurs** (Fall 2001, Fall 2002)

Self Employed

Attorney

Oct. 1999 - Dec. 2006

Passed the summer 1999 Alabama Bar Exam. Owned and operated my own law office for more than 7 years working on legal matters in a variety of areas.

Professional Memberships

Alabama State Bar – 1999- present

American Bar Association – 1999 – 2003

College and Community Service

- **KCTCS** - Senator - Kentucky Community and Technical College System – Representing Somerset Community College (2011 – 2013)
- **KCTCS** – Member of the Criminal Justice Curriculum Committee – Representing Somerset Community College (2007- 2013)
- **EKU** – Ed.D. program policy brief co-author: Pulaski County(KY) High School - Techniques to improve student math scores and avoid being taken over by the state for NCLB low performance. (Summer 2012)
- **SCC** - Chair of the Honors Night Committee (2011-2012)
- **SCC** – Coordinated student trips to the Kentucky State Police Crime Laboratory in Frankfort, KY. (2007, 2008, 2009, 2010, 2011)
- **SCC** – Coordinated student trips to the Federal Correctional Institute in Manchester, KY. (2008,2010, 2012)
- **SCC** – Member of the Diversity Initiatives Team (2010 – 2013)
- **SCC** – Member of the Advising/Orientation RSVP Team: Serving on the Research Subcommittee (2012 – 2013)
- **SCC** – Faculty Advisor - Criminal Justice Student Organization - Laurel Campus (2007 – 2013)
- **SCC** – Planner and Coordinator of the Criminal Justice Day events (March, 2008, April 2009, November 2011)
- **SCC** – Participant in the Criminal Justice Day event (March 2013)
- **SCC** – Member of Search Committee for Associate Dean of Business and Professional Services (June 2009)
- **SCC** – Chair of the Search Committee for Criminal Justice Instructor (July 2009)
- **SCC** – Member of the Search Committee for Criminal Justice Instructor (April 2009)
- **SCC** – Member of the Criminal Justice Advisory Board (2007 – 2013)
- **SCC** – Assisted with the International Festival (2008 – 2012)
- **SCC** – Criminal Justice Department Representative at the Super Sunday Minority Outreach (February 2012, February 2013)
- **SCC** – Girls Engaged in Math and Science(GEMS) program – Criminal Justice Faculty showed over 50 students how to dust for fingerprints. (November 2011, November 2012).
- **SCC** – Skills USA – The SCC criminal justice students won the 2011 Gold medal for crime scene investigation at the national competition. The team leader was a student in my criminal investigations and criminalistics courses.
- **SCC** – Member of the SCC Polar Plunge Team for Special Olympics (February 2012)

- **SCC** – Developed, deployed and administrated an online criminal justice exit exam for SCC to satisfy the Perkins requirements in order to bridge the gap between transferring from the Work Keys in 2008 over to the NOCTI in Fall 2012.
- **SCC** –Subject Matter Expert for the development of a NOCTI Criminal Justice exam to be used in the future for A.A.S. exit exams nationwide (Spring 2013).
- **SCC** – Speaker – Governors Minority Scholarship Program (Summer 2011, Summer 2012)
- Speaker at the Shoals CLE for Northwest Alabama Boys and Girls Club– Presentation: U.S. Supreme Court Criminal Law and Procedures Update of the 2011-12 Decisions. (Dec. 2012)

Professional Conferences/Training Attended

- **EKU** – Pedagogicon – Richmond, KY. 2014
- **KCTCS** - New Horizons Conference – Lexington, KY 2011, Louisville, KY 2012.
- **KCTCS** – Recruitment Conference – Versailles, KY 2010, 2012.
- **Kentucky State Police** - Completed the 11 week long Citizens Police Academy course from the Kentucky State Police during the Fall 2009 semester. (Certificate)