

**THE EFFECTIVENESS OF ONLINE LEARNING IN A BASIC LAW ENFORCEMENT
TRAINING ACADEMY: A QUANTITATIVE STUDY**

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THE EFFECTIVENESS OF ONLINE LEARNING IN A BASIC LAW ENFORCEMENT TRAINING ACADEMY: A QUANTITATIVE STUDY

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Dedication

To my faculty colleagues at Southeast Missouri State University for their continued support, guidance, and words of encouragement.

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The Effectiveness of Online Learning in a Basic Law Enforcement Training Academy: A Quantitative Study

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Abstract

From a student learning perspective, a significant amount of empirical research over the past 20 years clearly suggests online learning is as effective as traditional instructor-led classroom learning. As a result, online learning has been adapted by many educational institutions and professional organizations as an effective learning alternative to traditional face-to-face learning. One educational domain in which online learning has been patently rejected is in law enforcement training academies which provide basic police officer certification training. Many states prohibit online learning in these institutions because policy-makers do not believe it is as effective as face-to-face learning. Consequently, there is a lack of empirical research examining the effectiveness of online learning in this setting. This quantitative analysis attempted to address this gap in the research by comparing average test scores of academy students randomly assigned to a four-hour block of training in either an online setting or a traditional face-to-face setting. In support of the literature, the results of this study found no significant difference in student learning when comparing test scores of the two groups. Additionally, there was no correlation discovered between educational level, self-directedness and online learning success.

SECTION ONE:
INTRODUCTION TO DISSERTATION

Background

A world-wide revolution in education is upon us. For centuries, instructor-led classrooms were central to the educational process for both children and adults. Today, this traditional classroom environment is rapidly being replaced; or, at the minimum, supplemented, by internet-based online learning (Marold, Gwynne, and Mareno, 2000). The past two decades has seen explosive growth of online education in both k-12 and post-secondary educational institutions (Allen & Seaman, 2013; Barbour, M. et al., 2011). Based on an annual survey of online learning, the number of college students in the United States taking at least one online class increased from 1.6 million in 2002 to 6.7 million in 2011 (Allen & Seaman, 2013). This growth in online learning is not limited to the United States – it is indeed a global phenomenon (Barbour, M. et al., 2011). In fact, according to Harasim (2000), there has been a paradigm shift in attitudes concerning online learning. Based on her research, she concluded that “online learning is no longer peripheral or supplementary; it has become an integral part of mainstream society” (p. 59).

According to Means, Toyama, Murphy, and Baki (2013), there has been a similar growth in online training in the corporate world. Since 2000, the use of online learning has nearly tripled in that environment (Means et al., 2013). However, the transition to online learning for some occupational certifications and licensing procedures has been more *evolutionary* than revolutionary. This is particularly true for basic police officer certification training. The use of online learning in this educational environment is nearly non-existent. For example, a recent review of twelve Midwestern states discovered that only one state utilized online learning to provide more than one percent of its basic police officer training. One other state utilized online

learning to provide ten hours of its 643 hour basic police training curriculum. The remaining ten states did not utilize online learning at all (Kinnison, 2017). Thus, it appears the paradigm shift toward online learning has failed to reach the world of professional police training. The State of Missouri provides a good illustration.

In Missouri, basic law enforcement training requirements for new police officers is constantly changing. In 1979, for example, Missouri passed a law requiring every municipal and county police officer to receive at least 120 hours of State-approved basic law enforcement training within the first year of employment. Today, the minimum number of hours has increased to 600 (Standard Basic Training Curricula and Objectives, 2008); and, the training must be completed *before* employment (Peace Officer License Required, 2014). Furthermore, modifications and updates to the core training curriculum occur on an annual basis. One thing that has not changed, however, is the *method* of training delivery. Since 1979, State imposed regulations mandate that every hour of the 600 hour core curriculum for basic law enforcement training be delivered in a traditional face-to-face environment (Minimum Standards for a Certified Basic Training Course, 2008).

Although the number of hours for basic police officer certification and continuing education are based on State law, most rules and regulations concerning law enforcement training (including core curriculum, specific number of hours, training academy certification, instructor certification, method of training delivery, etc.) are regulated by the Missouri Police Officer Standards and Training (POST) commission, in conjunction with the director of the Missouri Department of Public Safety (Peace Officer Standards and Training Program Administration, 2008). The POST commission consists of eleven governor-appointed members,

seven of which are law enforcement executives from different regions of the State. The remaining members consist of one law enforcement academy director, two certified police officers at or below the rank of Sergeant, and one public member with no law enforcement related experience (Peace Officer Standards and Training Commission Established, 2014). Presently, the POST commission allows online learning for supplemental training (additional training above the 600 hour core curriculum) in a basic law enforcement academy, and for continuing education credit. However, online learning is strictly prohibited for any portion of the 600 hour core curriculum. (Minimum Standards for a Certified Basic Training Course, 2008). The primary reason for this prohibition is a belief that online learning is not as a method of training delivery is not as effective of as the traditional instructor-led face-to-face classroom delivery (J. Spratt, personal communication, January 6, 2017).

Statement of the Problem

Problem of practice

As a result of the POST commission's refusal to allow an online format for basic police training, several problems have emerged. First, an increase in hours has led to a predictable increase in both student tuition and other ancillary costs. The increase in tuition is needed for each academy to cover the cost of additional instruction. The increases in ancillary costs consist of student travel, food, and lodging required for the additional weeks of training.

Second, according to POST regulations, a student cannot be certified if they miss more than thirty hours of academy training. Students who reach this threshold due to unforeseen circumstances such as illness, injury, a death in the family, and so forth, are forced to withdraw from the academy and make up the hours missed in another academy session. This may delay the

issuance of their certification for six months or longer, which may pose a significant financial hardship for the student.

Third, many academies in the State offer part-time law enforcement academy training on evenings and weekends. The part-time academies are designed to serve numerous individuals interested in law enforcement careers who are currently working full-time and cannot afford to take months off without pay to attend a full-time academy. The inflexibility and rigor of a part-time academy schedule where students meet three or four times a week for thirty weeks or more can be overwhelming to anyone interested in attending a part-time academy session.

Fourth, from an administrative perspective, there are circumstances in which academy classes need to be cancelled (primarily due to weather related events). With a rigorous schedule, including start and end dates that are difficult to modify, it is problematic to make-up more than a few hours missed due to these type events during the course of an academy session.

Lastly, online training can reduce overall operational costs for law enforcement academies. Once an online training program has been developed, the training can be delivered without the added cost of a classroom instructor. These cost savings can lead to lower student tuition rates; or, at the minimum, prevent or minimize future increases in tuition.

Each problem mentioned above would be lessened if the State of Missouri allowed the incorporation of online learning in the State mandated basic law enforcement training. Student costs would be minimized for both full and part-time academy students; students missing thirty hours or more of training due to legitimate, unforeseen events could make up hours and graduate on time; more flexibility would be available to part-time students wishing to change careers; academy directors could build flexibility into their schedules to better contend with unforeseen

events requiring class cancellations; and cost savings to training academies would result in lowering, or at least stabilizing, student tuition rates.

However, members of the Missouri POST commission are hesitant to allow online learning in basic police training because they question whether online learning is as effective as traditional face-to-face learning, and they want to enhance opportunities for social interaction in order to build interpersonal relationship skills (J. Spratt, personal communication, January 6, 2017). Although there are numerous studies in the field of education and training that provide ample evidence to support the argument that online learning is as effective as traditional face-to-face learning (U. S. Department of Education, 2010), no such relationship has been investigated in a basic law enforcement academy setting.

Existing gap in the literature

There is very little research comparing the effectiveness of online learning to traditional face-to-face instruction for students seeking basic peace officer certification in the United States. One reason for this is that many states simply do not allow online education for students attending basic law enforcement academies. For the few states that allow a portion of the basic police training to be taken online, no empirical evaluations of effectiveness were found. Thus, much of the online education research for law enforcement officers involves continuing education or professional development, which many states allow.

Purpose of the Study

The purpose of this study is to examine the relationship between online learning and traditional face-to-face learning in a basic police training academy environment. As noted, there is an abundance of literature which supports the hypothesis that online learning is equally

effective as traditional face-to-face learning. Similar research in the field of law enforcement is limited, and the research centers primarily on the effectiveness of online learning in a continuing education or professional development capacity. However, this research is also limited. As Donavant (2009) pointed out, “the literature on the use of OE [online education] for police training is very primitive, even in relation to other professions, and there is a need for empirical studies that evaluate the efficacy of online delivery methods in this area” (p. 226).

Understandably, training topics such as firearms, defensive tactics, handcuffing techniques, etc., are not practical to teach in an online learning environment. Proficiency in these topics requires hands-on, face-to-face interaction with an instructor. For this reason, the purpose of this study can be further narrowed to an examination of the relationship between online learning and traditional face-to-face learning for course topics conducive to an online learning format.

Research Questions

The purpose of this study is to examine the relationship between online learning and traditional face-to-face learning in a basic police training academy environment. Specifically, this research will examine the difference between student learning in a face-to-face and online method of instructional delivery while participating in basic police training. Previous research regarding the effectiveness of online learning has identified several variables that tend to be positively related to the success of online learning (Halicioglu, M., 2010). These variables include: gender, educational level, previous online experience, and technological expertise. This study addressed the following primary (#1) and secondary (#2 and #3) research questions:

1. How does online learning, compared to traditional face-to-face learning, impact student learning for students attending a basic law enforcement training academy?
2. What is the relationship between educational level attained and success in online learning as compared to traditional face-to-face learning?
3. What is the relationship between self-directedness and success in online learning as compared to traditional face-to-face learning?

The study examined the following hypotheses:

H₀: There will be no statistically significant difference in test scores for students receiving instruction in an online method of course content delivery than for students receiving instruction in a traditional face to face method of course content delivery in a basic law enforcement training academy.

H₀: Level of education will result in no statistically significant difference in test scores for students receiving instruction in an online format or a traditional face-to-face format while attending basic law enforcement academy training.

H₀: Level of self-directedness will result in no statistically significant difference in test scores for students receiving instruction in an online format or a traditional face-to-face format while attending basic law enforcement academy training.

Conceptual / Theoretical Framework

Adult learning

During the past 80 years, research on adult learning in general has progressed from questioning whether adults possessed the capacity to learn at all, to a recognition that adult learning is a complex phenomenon in which there is no one single, simple explanation (Merriam,

2001). Today there are many theories, models, sets of principles, and explanations that, combined, compose the knowledge base of adult learning (Merriam, 2001). Three of the more well-known theories which are very applicable to this study, include andragogy, self-directed learning, and transformative learning (Merriam, 2001; Garrison, 2007; Taylor, 2007).

Andragogy. Andragogy and pedagogy are two models often used to describe how individuals learn. While pedagogy refers to the process in which children learn, the term andragogy is used to describe adult learning (Taylor & Kroth, 2009). Although the word andragogy was coined by a German teacher in 1833, it was the seminal work of Malcom Knowles in 1973 that introduced this theory to many educators in the United States who were trying to separate the field of adult education from other areas of education (Merriam, 2001). In his publication, *The Adult Learner: A Neglected Species*, Knowles (1973) emphasized the differences between the learning process of children and adults, and described adult learning (andragogy) as more learner-centered while pedagogy was more teacher-centered.

Specifically, Knowles (1973) identified an adult learner as someone who: (a) continues to move toward an increasing level of self-directedness which teachers should nurture and encourage; (b) possesses a diversity of life experiences which provide a rich resource for learning; (c) attaches more meaning to learnings they gain from experience than those they gain passively; (d) seeks to learn something when they experience a need to learn something in order to cope with real-life concerns or problems, and; (e) is motivated to learn in order to achieve their full potential in life.

Based on these assumptions as they relate to implications for practice, Knowles (as cited in Merriam, 2001) suggested changes in the following areas: *the learning climate*, in which

classrooms should be designed so that adults feel more at ease, and that teachers and administrators create a climate of adulthood which considers adult learners self-directed human beings; *the diagnosis of needs*, where adult learners self-discover gaps in their learning and therefore become deeply motivated to remove these gaps; *the planning process*, which should allow adult learners to participate in the design and method of specific learning strategies; *the learning experience*, which should reflect the mutual responsibility of the teacher and students, so that the role of the teacher is more as a facilitator and resource person; and, *the evaluation system*, which should move beyond the simple assignment of grades to one of self-evaluation in which students self-discover their learning progress.

Self-directed learning. According to Garrison (1997), self-directed learning theory (SDL) may be one of the most prominent and most researched theories of adult learning. In fact, many educational institutions today consider it a goal to make their students life-long, self-directed learners (Merriam, 2001). Although Knowles introduced the concept of self-directedness in his theory of andragogy, it was primarily through research conducted by Tough in 1967 that provided the first description of SDL (Merriam, 2001). Research by Tough and others documented a type of adult learning “that is wide-spread, that occurs as part of adults' everyday life, and that is systematic yet does not depend on an instructor or a classroom” (Merriam, 2001, p. 8). Although there is no universally accepted definition of SDL, one of the more common definitions was provided by Knowles who defined SDL as a process in which "individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and

implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, as cited by Scott, 2006, p. 5).

The development of a learner's capacity to be self-directed and the fostering of transformational learning are two goals of SDL (Merriam 2001). The challenge for teachers is to create an educational climate which advances both goals (Garrison, 1997). However, not all students are at the same level of self-direction. According to Grow (1991), "learners advance through stages of increasing self-direction and that teachers can help or hinder that development" (p. 125). Additionally, learners may demonstrate different levels of self-directedness depending on the learning context. For example, familiar topics in which the student has prior experience may lead to higher degrees of self-directedness than topics unfamiliar to the learner (Candy, 1991). With this in mind, Grow developed the staged self-direction learning (SSDL) model so learners could identify their level of comfort with being self-directed. Instructor effectiveness was maximized when educators matched their style of instruction with the learner's stage of self-direction. For example, a dependent learner requires more lecture and directed learning activities, while a self-directed learner prefers independent learning activities in which the instructor role is that of a consultant or monitor (Grow, 1991). The overall effect of matching instructor style with learner readiness during a specific learning period would ultimately result in a student who is even more self-directed.

When considering these basic tenets of SDL, it seems reasonable to conclude that highly self-directed students would be more satisfied and more successful in an online learning environment. There is both putative and empirical evidence to support this conclusion. Lowe (1997) surmised students lacking in self-direction were at a serious disadvantage when taking

online classes in which their access to the instructor, their peers, and campus resources were limited. Song and Hill (2007) discovered that online learning success requires students to take control in “planning their learning pace, monitoring their learning comprehension, and making judgements on various aspects of their learning progress” (p. 35). These characteristics are central to the self-directed learning model, and consistent with an online learning environment. Corbeil (2003) also discovered highly self-directed students were both more successful and more satisfied with online learning. Similarly, in a narrative synthesis of more than thirty recent studies comparing a broad range of factors that affect both performance and satisfaction within the online learning environment, Kaufman (2015) identified self-directedness (described in the review as self-regulation) as one of four factors most likely to predict success in an online course. The other three factors included emotional intelligence, reflective/visual learning styles, and internal locus of control. Additionally, research suggests online learning further develops a student’s level of self-directedness by improving student initiative, responsibility, discipline, and use of resources; particularly if reflective thinking is incorporated into the course design (Kaufman, 2015; Vonderwell and Turner, 2005). Thus, as Vonderwell and Turner pointed out, self-directed students participating in an online learning environment will be successful *and* enhance their level of self-directedness.

Transformative learning. Transformative learning is another one of the most discussed and researched theories in the field of adult learning (Taylor, 2007). This theory was developed by Jack Mezirow in 1978 and was based on his qualitative research on the re-entry learning experience of women going back to college after a long break from school (Kitchenham, 2008). During his research Mezirow discovered a consistent theme in which all the women experienced

what he defined as *perspective transformation*, which was triggered by a *disorienting dilemma* (Kiely, 2005).

According to Mezirow (1981), as we grow and mature, we develop a frame of reference – a series of beliefs, values, feelings, etc. – which relate to how we think about ourselves and our relationship with others. This frame of reference helps us understand our experiences in this world. Sometimes, however, our frame of reference restrains our movement toward learning. A disorienting dilemma often moves us to critically reflect upon our frame of reference, to understand where we are, and to make a conscious decision to change. It is this change in perspective which is central to transformative learning. Mezirow identified the following ten elements which lead to perspective transformation:

(1) a disorienting dilemma; (2) self examination; (3) a critical assessment of personally internalized role assumptions and a sense of alienation from traditional social expectations; (4) relating one's discontent to similar experiences of others or to public issues – recognizing that one's problem is shared and not exclusively a private matter; (5) exploring options for new ways of acting; (6) building competence and self-confidence in new roles; (7) planning a course of action; (8) acquiring knowledge and skills for implementing one's plans; (9) provisional efforts to try new roles and to assess feedback; and (10) a reintegration into society on the basis of conditions dictated by the new perspective (p. 5).

Mezirow (1981) described two ways in which the perspective transformation occurs. The most common is through a series of cumulative experiences in which an individual, through critical reflection, questions and revises their own cultural and psychological assumptions about

themselves and others until the nature of their assumptions have been transformed. The second is a sudden insight into the structure of these assumptions which have limited or distorted their understanding of themselves and their relationships with others. Often, the sudden insight is brought on by a traumatic life event, such as the loss of a loved one, a serious illness, a natural disaster, the loss of employment, etc. In both cases, the resultant transformation generates perspective introspection which motivates learning.

In a meta-analysis of transformational learning research, Taylor (2007) identified several successful methods of fostering a transformative learning environment. One was to provide experiential learning which promoted an emotional experience – an experience likely to stimulate critical reflection and therefore result in a disorienting dilemma. A second was to vary the instructional medium so that specific instructional strategies would cause students to question traditional practices, redefine individual relationships, and critically reflect on their assumptions and beliefs. A third was for individual instructors to look for *pedagogical entry points* – a point in which a student is in a transitional zone on the verge of re-defining their habits of thinking. Instructors should be aware of when a student reaches this point, and further facilitate this student's self-awareness and critical reflection. Additionally, Taylor identified specific things which should be avoided. Such things as strict adherence to rules, rigid role assignments, and an emphasis on task completion as opposed to reflective dialog tended to impede transformative learning (Taylor, 2007).

Incorporating transformative learning strategies into an online learning environment may initially seem insuperable. However, through the use of technology and resourceful instructional design, research suggests transformative learning can be fostered in the online environment.

According to Henderson (2010), critical reflection can be achieved in an online course through such things as discussion forums, written assignments, watching videos with follow-up discussions, instructor questions and assignments which incorporate opposing viewpoints, asking students to respond to other students' comments, and more. Activities such as these can trigger a reflection on one's assumptions. Furthermore, since most online discussions are asynchronous, students have time to critically reflect on their responses before responding thereby deepening their introspection (Henderson, 2010). As Mezirow (1981) pointed out, it's this deep introspection which is most likely to lead to a disorienting dilemma. A number of research studies have found evidence where such critical reflection in online classes has resulted in transformative learning. For example, Boyer, Maher, & Kirkman (2006) reviewed the content of reflective writings of online graduate students to determine if all phases of transformational learning were evident in an online environment. A systematic content analysis of the students' writings produced clear evidence that supported all phases of transformational learning. According to the authors, "it was evident that fundamental changes in their [the student's] established ideas, beliefs, habits, or assumptions had occurred (p. 351). Similarly, after analyzing a series of reflective writings in a required capstone course, Provident, et al. (2015) found the occurrence of multiple steps of the transformative process for graduate students enrolled in an online doctoral program. Langley & Brown (2010); Meyers (2008); Stevens-Long, Schapiro, & McClintock (2012); and Wansick (2007), all found similar evidence of the occurrence of transformative learning in online classes in their respective studies. Meyers summed up the research in this area very well when he concluded that online classes incorporating tools which facilitate communication, collaboration, and the exchange of information can be highly effective

for a transformative style of teaching and learning. Such tools allow students “to critically examine their assumptions, seek out additional perspectives, grapple with social issues, and create change (p. 223).

Design of the Study

This study was primarily quantitative in design. As Creswell (2009) explained, there are no clear lines separating quantitative and qualitative approaches to research design. Instead, “a study tends to be more qualitative than quantitative or vice versa” (Creswell, p. 3). Creswell further explained that a quantitative approach is typically a means used to test theories by examining the relationship among variables which can be measured and represented by numbers, and ultimately analyzed using statistical procedures. One strategy of quantitative research consists of providing a specific treatment to one group while withholding the treatment from another group, and measuring the outcomes for both (Creswell, 2009). The design of this study was very similar to this description.

Setting

This study was conducted at two law enforcement training academies in the State of Missouri – the LEA1 Academy and the LEA2 Academy. It should be noted that the principal investigator is currently the director of the LEA1 Academy. Participants attending the LEA1 Academy were selected from three separate cohorts of students attending 760 hours of basic law enforcement training on a full-time basis. The first cohort attended training during the Spring, 2016 academy session; the second attended during the Fall, 2016 session; and the third attended during the Spring, 2017 session. Participants attending the LEA2 Academy were selected from two separate cohorts of students attending 1000 hours of basic law enforcement training

simultaneously – one full-time cohort and one part-time cohort. The part-time cohort attended twenty-five hours of training each week during the evening hours.

Very specifically, the students at both academies were participating in a portion of the basic law enforcement training commonly referred to as supplemental training. The Missouri POST program defines supplemental training as any POST approved training provided in a basic law enforcement academy that goes beyond the minimum number of training hours required by State law. Currently, Missouri law requires at least 600 hours of training for individuals seeking police officer certification. As part of this 600 hour mandate, State regulation dictates the specific training topics which must be covered, as well as the number of training hours required for each topic. This 600 hour block of training is commonly referred to as the *core curriculum*. However, most of the nineteen State-certified law enforcement academies in Missouri provide more hours of training than the core curriculum requires. This additional training is commonly referred to as supplemental training. Although there are no limits to the number of supplemental training hours an academy may offer during its basic police training, in most Missouri academies it ranges from 40 to 600 hours (J. Spratt, personal communication, January 6, 2017). The additional hours not only benefit the students by increasing their marketability when applying for police officer positions, but also better prepare them to deal with the realities of today's policing. Training in such topics as Tasers, patrol rifles, radar, human trafficking, conflict resolution, working with the mentally impaired, and others are often included in the supplemental training.

Participants

The participants in this study consisted of forty-two students who attended the LEA1 Academy and fifteen students who attended the LEA2 Academy. The purpose and expectations

of this study, accompanied with an invitation to participate, was presented to each cohort of students attending the five academy sessions. Since the principal investigator was the Director of the LEA1 Academy, the training coordinator presented this information to the LEA1 Academy cohorts in an effort to avoid undue influence. The principal investigator presented the information to the cohorts attending the LEA2 Academy. After the presentation, students were given time to consider their participation and asked to contact the principal investigator for follow-up questions or to sign consent forms if they chose to participate (see Appendix A for the consent form). A total of eighty-two students were provided an opportunity to participate, of which fifty-seven chose to do so.

For each of the five academy sessions, the Rand function of Microsoft Excel was used to assign participating students to either the experimental group or the control group. Microsoft Excel's Rand function "returns a uniform random number that is greater than or equal to 0 and less than 1" (Walkenbach, 1996, p. 212). Initially, two random numbers were calculated for each of the two group sets – one number for the experimental group set and one number for the control group set. The two group sets were then ranked in ascending order. Random numbers were calculated for each student participating in the study. The students were then-ranked in ascending order by the number assigned. Students in the lower half of the ranking were assigned to the group set with the lowest number, and students in the upper half of the ranking were assigned to the group set with the highest number. After eliminating one outlier, a total of 28 students were assigned to the experimental group, and 28 students were assigned to the control group.

Training

A four-hour block of training on the topic of human trafficking was developed and utilized to compare the effectiveness of online learning to traditional face-to-face learning. The experimental group received the four-hour block of training online, while the control group received a similar four-hour block of training in the traditional face-to-face format. The online training was created using Camtasia® software, and consisted of eight video segments ranging from eighteen to thirty-seven minutes in length. The combined length of all eight videos was 201 minutes. According to Missouri POST regulations, fifty minutes of content presentation and one ten minute break equals one hour of training. Thus, a minimum of 200 minutes of training content was required to satisfy this regulation. The video segments were comprised of narrated PowerPoints utilizing animation and graphics to emphasize key points, with training videos inserted to further clarify important topics. Additionally, test questions requiring a student response were embedded at different points throughout each video in an effort to ensure student engagement. Although the answers did not have to be correct, a user response was required to continue. To enhance learning, the questions and correct responses were listed at the conclusion of each video. A free web-based teaching resource, EDpuzzle (Valle, 2015), was used to insert the questions; manage student access to the training videos; track student progress; and prevent students from fast-forwarding, or skipping, through the videos.

To measure learning, students in both the experimental and control groups were tested in a classroom simultaneously using a twenty-five question multiple-choice paper / pencil test. Access to training materials was not allowed during the testing process. To maintain consistency, the test was administered five days after the face-to-face training for each cohort of students.

Although this time period was constant throughout the study for the control group, it was not consistent for the experimental group. Students in the online group had access to the training videos beginning the day before the face-to-face training was conducted until the time of the test. This is consistent with an online learning model, in which web-based materials are continuously available to students when they have internet access.

Instrumentation

As mentioned, the test used to measure student learning was a twenty-five question, four-alternative multiple-choice exam which was constructed by the author (see Appendix B for the test). This format was chosen for several reasons. First, it is similar in format to multiple choice questions used on exams in many law enforcement training academies throughout the State of Missouri, and to the format of the State peace officer license exam which all academy graduates must pass to receive their police officer certification (J. Spratt, personal communication, January 6, 2017). Second, compared to multiple choice questions with less than four alternatives, or to true/false questions, four alternatives limit the chance of guessing a correct answer and thereby provide a better assessment of knowledge. Third, multiple choice questions permit objective grading. Lastly, compared to short answer or essay questions, multiple choice questions allow a broader sample of course content to be tested in a given time period. As a result, student scores will likely be more representative of the student's overall achievement in the course of study (Simkin & Kuechler, 2005).

Reliability of the multiple choice exam was assessed through a pilot test administered in a traditional face-to-face criminal investigations class consisting of twenty-two college students of similar age, race and gender to a majority of law enforcement academy students. The criminal

investigation students were provided the same four hour block of instruction on the topic of human trafficking presented to the academy students. When the pilot test was administered, the students were asked to highlight and comment on any confusing language observed in either the questions or the alternative responses. As a result, three questions were slightly altered to enhance clarity.

Item analysis was used to further assess the pilot exam's reliability. Specifically, item difficulty was used to measure the percentage of students who correctly answered each question, and Cronbach's alpha was calculated to measure the exam's internal consistency. According to Kehoe (1995), the purpose of assessing item difficulty is to identify questions which may be too easy or too difficult. Very simply, it is the proportion of students answering an individual test item correctly; and is calculated by dividing the number of students who responded correctly to a question by the total number of students taking the exam. This percentage is often referred to as a p-value, which has a range from 0 to 100 percent and is often written as a proportion of 0.0 to 1.00 (Champlain, 2010). For example, if 85 percent of the students answered question number four correctly on an exam, the p-value for question four would be 0.85.

The average p-value for all questions on the pilot exam was 0.88, with a range of 0.50 to 0.95. It is generally recognized that questions with p-values between 0.30 and 0.80 constitute a good test (Kehoe, 1995). In general, low p-values should be reviewed for confusing language or re-instruction, and high p-values should be reviewed based on the instructor's purpose (Item Analysis, n.d.). If student mastery of the material is the instructor's intent, then p-values greater than 0.9 may be acceptable (Item Analysis).

The fundamental goal of law enforcement academy training is student mastery of the material (J. Spratt, personal communication, January 6, 2017). Considering the alternative, this seems logically sound. For example, if instruction is provided on the collection and preservation of DNA at crime scenes, it is critically important that every student understand this process. Otherwise, criminals who may have been identified through the proper collection of their DNA at a crime scene may remain at large to commit additional crimes simply because an officer lacked the knowledge to properly collect and preserve DNA evidence. This same principle applies to training in such topics as the use of deadly force, constitutional rights of citizens, statutory law, etc. Therefore, redundancy is commonly incorporated in law enforcement academy training to emphasize key points, and students are consistently queried verbally by the instructor to assess knowledge and comprehension (personal communication). The overarching instructional goal is that all students understand the material equally well, and answer *all* exam questions correctly. For this reason, it is not uncommon to expect p-values greater than 0.8 on many law enforcement academy exams. Thus, an average p-value of 0.88, with a range of 0.50 to 0.95, on the pilot exam was reasonable.

Internal consistency of the pilot exam was measured using Cronbach's alpha, which is one of the most often used formulas to measure this attribute (Wells & Wallach, 2003). Nunnally and Bernstein (1994) describe internal consistency as the estimate of reliability "based on the average correlation of items within a test" (p. 251). Overall, its purpose is to determine how well items on a test "provide consistent information with regard to student's mastery of the domain" (Wells & Wallach, p. 4). It is measured by calculating a reliability coefficient, which, for each question, examines the proportion of participants selecting the correct answer in relation to the

standard deviation of the total test scores (Consadine, Botti, & Thomas, 2005). Reliability coefficients range from zero to one. The closer the coefficient is to one, the higher the reliability (Consadine, Botti, & Thomas). Although there is no specific threshold, the generally accepted standard for most classroom exams is a reliability coefficient of 0.70 or higher (Champlain, 2010; Wells and Wallach). The value of Cronbach's alpha for the pilot exam was 0.77, which suggests an acceptable level of internal consistency.

The instrument used to measure self-directedness in this study was the Resource Associates Transition to College (RATTC) Self-Directed Learning Scale (see Appendix C for the scale and permission to use the scale). This scale was developed as part of the larger RATTC inventory, which is a personality assessment designed to measure the Big Five Traits of openness, conscientiousness, extroversion, agreeableness, and neuroticism for adolescents and adults (Lounsbury & Gibson, 2006). Additionally, the larger inventory measures the narrow traits of aggression, career-decidedness, optimism, self-directed learning, sense of identity, tough-mindedness, and work drive (Lounsbury & Gibson, 2006).

The RATTC Self-Directed Learning scale consists of ten questions with a five point Likert-scale response, ranging from strongly disagree to strongly agree. The scale measures learner self-direction as a personality trait "reflecting individuals' preference to be in charge of his or her learning process, ability to conceptualize, plan, implement, and evaluate one's academic experience; and disposition to be goal-oriented and to work independently or in group settings with little guidance" (Kirwan, Lounsbury, & Gibson, 2014, p. 3). As a variable, self-direction is measured on a continuum from low to high, instead of as a categorical or nominal variable (Kirwan et al., 2014). For each question on the scale, the following values were assigned

to each response: “1” for Strongly Disagree, “2” for Disagree, “3” for Neutral/Undecided, “4” for Agree, and “5” for Strongly Agree. These items were then summed for each individual survey to determine each participant’s self-directed learning score. Information pertaining to scale development, reliability, criterion-related validity, construct validity, and norming for both the RATTC and the RATTC Self-Directed Learning Scale can be found in Kirwan (2012); Kirwan, Lounsbury, & Gibson (2010); Lounsbury, Levy, Park, Gibson, & Smith (2009); Lounsbury, Tatum, et al. (2003); Lounsbury, Gibson, and Hamrick (2004); and Lounsbury and Gibson (2015). The ten scale RATTC Self-Directed Learning scale and permission to use the scale is presented in Appendix C.

To determine educational level attained, a simple survey instrument was utilized to gather data. Each participant was asked to indicate their total number of college hours accumulated and their highest educational degree attained (see Appendix D for the survey instrument).

Statistical Analysis

According to Field, (2013), the use of an independent means t-test is most appropriate to compare the difference between two means when there are two experimental conditions with different people assigned to each condition. For this study, the online learning group and the control group constitute the two experimental conditions, with different students in each group. Thus, the independent means t-test was used to analyze the difference between mean test scores of the two groups to determine if there was a statistically significant difference between test scores. Pearson’s correlation coefficient was used to determine if there was a positive

relationship between two independent variables – self-directedness and education level attained, and the dependent variable – success in online learning (Field, 2013).

Limitations, Assumptions, and Design Control

Several limitations to this study have been identified. First, the law enforcement academy students sampled in this study were not representative of all law enforcement academy students. The population from which the sample was drawn for this study included students from five cohorts attending two different law enforcement training academies in a mid-western state over the course of one year. This limited sample may not accurately reflect law enforcement academy students in general, and therefore affects the generalizability of the study.

Second, the sample size for this research was small ($N = 56$). As a result, statistically significant differences in test scores are less likely to be observed. Thus, the study is not as statistically strong as it might be with a larger sample. The small sample also affects the generalizability of results.

Third, participation in this study was voluntary. Thus, the students who volunteered to participate may not be representative of the overall population of academy students enrolled at the time this study was conducted.

Lastly, the RATTC scale used in this study to measure level of self-directedness is a self-report instrument and subject to problems associated with such instruments. Responses to the questions require individual understanding, introspection and perceptions leading to responses which may be biased, inconsistent, or inaccurate.

One assumption associated with this research is that the instructor-developed exam accurately measured student learning outcomes.

Definition of Key Terms

Basic police training. The amount of training which must be successfully completed before an individual can be State certified as a police officer and hired by a public law enforcement agency.

Core Curriculum. A course of study established by the POST Commission for the 600 hours of basic police officer training required by Missouri statute. This is the minimum number of hours required to be certified as a police officer.

Face-to-face learning. A method of instruction in which one or more instructors deliver educational material in a classroom to one or more students, and where there is no physical separation of instructor and learner.

Law enforcement training academy. A training institute certified by the State in which it is located that is authorized to offer both basic police training and in-service training for currently licensed police officers.

Missouri Police Officer Standards and Training (POST) Commission. According to the POST Program's website, the POST Commission "establishes the core curriculum and formulates definitions, rules and regulations for the administration of the Peace Officer Standards and Training Program and advises the Director concerning duties as outlined by statute." (<http://boards.mo.gov/UserPages/Board.aspx?102>)

Missouri Police Officer Standards and Training (POST) Program. A program housed within the Missouri Department of Public Safety which is responsible for licensing police officers and ensuring compliance with police officer continuing education requirements. The

POST Program also licenses law enforcement basic training academies, training instructors, and approves law enforcement training curricula.

Online learning. According to Allen and Seaman (2013), online learning is usually defined as a course of study where more than 80 percent of all content is delivered online, and there are no face-to-face meetings with instructors. For the purpose of this study, the content of the online training modules will be delivered 100 percent online. The terms online learning and online training will be used synonymously.

Supplemental training. The number of training hours a law enforcement training academy augments the minimum 600 hour core curriculum for basic police training as required by State law. The supplemental training is a seamless continuation of training during the basic police officer training.

Significance of the Study

Currently, every state governs the certification process for individuals seeking careers in law enforcement within their state. Often, these laws mandate the number of hours of training, the standards required for training facilities and instructors, and admission requirements for individuals seeking admission into a training academy. The topics of training and the number of hours dedicated to each topic, the methods of training delivery, and other operational rules and regulations are often legislatively delegated to a specific state agency. Many of these State agencies are required to seek expert advice from a politically appointed board of directors with extensive law enforcement backgrounds. This board makes decisions which ultimately become state policy regulating law enforcement training and certification procedures.

One recent issue many of these State agencies and training boards have considered is whether to allow the use of online learning as part of a state mandated law enforcement training curriculum. As previously mentioned, there is a dearth of research examining the effectiveness of online learning in law enforcement training environments. This is particularly true for law enforcement training academies conducting training for students seeking basic police officer certification. Thus, for policy-makers in every State who must decide whether they should allow online learning, there is very limited data available to guide their decisions. Thus, decision makers are often forced to rely on gut instinct or anecdotal evidence only. This study will provide policy makers with empirical data and allow them to make evidence based decisions concerning the use of online learning in the law enforcement training process. Additionally, this study will hopefully provide an impetus for additional research in an area of online learning which has been heretofore overlooked.

Summary

Online learning continues to flourish as a method of educational delivery in the United States and across the globe. A significant amount of research examining the effectiveness of online learning suggests it is both effective and offers numerous advantageous to many learners. Occupational education and training, however, is one area where online learning lags – particularly in law enforcement training environments. Policy makers in many states, including the State of Missouri, have simply refused to allow online learning in basic police academies. Due to limited research in this area, this decision is primarily based on gut instinct or anecdotal evidence alone. The purpose of this study is to examine the effectiveness of online learning in a basic police training environment; and thereby allowing policy makers the opportunity to use

empirical evidence when making decisions concerning the use of online learning in basic police training academies. It is also hoped this study will generate additional research in an area of online learning with very limited empirical exposure.

SECTION TWO:
PRACTITIONER SETTING FOR THE STUDY

Introduction

Two Missouri law enforcement training academies, LEA1 and LEA 2, will be the focus of this study. LEA1 and LEA2 are two of nineteen law enforcement training academies in Missouri currently certified by the State to train individuals interested in becoming police officers in the mandatory 600 hours of core training required by Missouri law. Although the State requires a minimum of 600 hours of basic police training, currently LEA1 provides a total of 760 hours of training as part of its basic police curriculum, while LEA 2 provides a total of 1000 hours. As mentioned previously, all training hours provided in the basic police training curriculum at each academy which is above the 600 hour minimum is referred to as supplemental training.

History of Organizations

LEA1

LEA1 is part of the College of Health and Human Services at a public four-year university in the state of Missouri. The University was founded in the late 1800's and is one of thirteen public four-year universities in the State. The University consists of a main campus, a secondary campus, and three regional campuses. More than 200 areas of study with more than 1500 courses are offered by the University each semester. There are five academic colleges: College of Business, College of Education, College of Health and Human Services, College of Liberal Arts and College of Science, Technology and Agriculture.

LEA1 has been part of the University since 1987, when an agreement was reached with a regional police department for the University to take over operations of what was then known as the Region 1 Law Enforcement Training Academy. The Region 1 academy had been directed

and housed at the regional police department since 1979. Although LEA1 is part of the University, organizationally it was established as an auxiliary department. Direct supervision was the responsibility of the Chair of the Department of Criminal Justice, who later became the Director of the Academy while maintaining University faculty status. Due to the auxiliary status, no operational funding was provided by the University. In fact, today, the academy pays the University an annual stipend for services they provide, e.g., building space, utilities, information technology support, etc.

As the demands for certified law enforcement officers grew, and the minimum number of hours increased, additional personnel resources were slowly added to LEA1. Currently the Academy consists of one director (who also teaches within the Department of Criminal Justice and Sociology), two full-time staff members, one part-time student worker, and more than 20 part-time State certified instructors who are responsible for teaching much of the Academy's curriculum. In 2006, LEA1 acquired a new training facility through Federal grant money, and moved from the main University campus to a location approximately seven blocks from the main campus.

Applicants to LEA1 must be United States citizens who have earned a high school diploma (or its equivalent), be at least 21 years of age (or reach the age of 21 no more than three months after graduation), and possess a valid driver's license. Additionally, they must successfully complete a criminal background check. Currently, students attending the University may apply to attend the Academy as part of their degree requirements. University students majoring in Criminal Justice who successfully complete the Academy receive college credit toward their degree. Thus, by choosing this particular program track, students interested in a

career in law enforcement are able to obtain their police officer certification while working toward their Bachelors of Science degree.

LEA2

LEA2 is part of the Criminal Justice program at a community college in the state of Missouri. The community college was founded in 1922 and consists of one main campus and six additional outreach locations in the region. The College consists of nineteen academic departments and has a student population of approximately 4,000. LEA2 was established as part of the College in 1994 to serve the needs of their students wishing to pursue police officer certification as part of their program of study, as well as the needs of law enforcement agencies within their region. The Academy is located on the main campus and shares a building with the Criminal Justice Department. LEA2 offers two basic 1,000 hour police academies each year – one full-time day academy and one part-time evening academy. The Academy currently consists of one director, five full-time instructors, and approximately 30 part-time instructors.

Applicants to LEA2 must be United States citizens who have earned a high school diploma (or its equivalent), possess a valid driver's license, and be at least 18 years of age at the beginning of the training course. If the applicant is not twenty-one years of age or older when the training is completed, state certification testing will be postponed until the age of twenty-one. Additionally, all applicants must successfully complete a criminal background check. Individuals attending the academy training must be enrolled as a student of the College, and each obtains credit toward their Associates of Arts degree in Criminal Justice.

Organizational and Leadership Analysis

The organizational framework at LEA1 and LEA2 are very similar, and may best be described as bifurcated. One organizational style governs the relationship between academy staff and academy students, and a different style governs the relationship between the academy directors and their respective academy staff. The organizational style most prominent in the interactions between academy staff and students would be described by Bolman and Deal (2008) as very structural. There is a strict adherence and reliance upon policy, the chain of command is clearly delineated and emphasized in day-to-day operations, there is a rational coordination of activities, organizational goals are specifically defined, expectations of students are very clear, and decisions affecting students are made in a very rational manner. This rigid organizational structure is intentional and is part of a cultural indoctrination of police recruits to the organizational structure seen in most United States law enforcement agencies. These agencies are quasi-military in nature with formal lines of authority and communication (Roberg, Novak, Cordner, and Smith, 2012). It is believed students will benefit from the exposure they receive to an organizational style in which they are likely to end up working within once they graduate from the academy.

Leadership within both academies supports this structure in a number of ways. First, academy students wear different uniforms than worn by academy instructors and academy staff. Psychologically, this separates the two groups and reinforces the rigid organizational structure with very clear lines of authority and communication. Second, students are required to stand at attention for inspection at the beginning of each day of training. Third, when students address an instructor or staff member they must use their official title, or the Mr. or Ms. prefix, along with

the staff member's last name. Lastly, there are certain areas in the academy building which are easily accessible but off-limits to students unless they first request and obtain permission from a staff member. Collectively, this list represents just a few policies which reinforce the structured discipline and organizational chain of command.

Additionally, there are very strict rules governing student behavior. Disciplinary action for minor violations of these rules is clearly defined by a progressive discipline policy beginning with a verbal warning, followed by a written warning, and ending with dismissal. These policies are usually followed to the letter. For example, one policy states that no student may be tardy to class, either at the beginning of the day or after a break. If a student is tardy once, they receive a verbal warning. Being tardy a second time results in a minor conduct violation which is documented and placed in the student's file. A third tardy results in a major conduct violation; and a fourth results in dismissal. Major violations of policy result in immediate dismissal. Of course, exceptions are provided for extenuating circumstances, but for the most part very little consideration is given to student's needs when enforcing such policy violations. Once again, such strict and rational adherence to policy, without consideration for the needs of the individual, is demonstrative of how leadership at both academies promotes the rigid organizational structure.

As mentioned previously, the organizational style between the academy directors at both academies and their respective staff is different. Based on Bolman and Deal's (2008) description of organizational perspectives, the human resource frame might best describe this relationship. This frame considers *human needs* as well as organizational needs, but considers people at the center of an organization (Bolman and Deal, 2008). In such an environment, employee

participation and involvement, empowerment, enrichment, teaming, and egalitarianism are all considered critical to the success of an organization (Bolman and Deal, 2008).

The directors of both academies support this organizational frame by focusing on the needs of the organization and the needs of employees. The prevailing style of leadership is best described as participative and democratic; one which promotes employee involvement and shares organizational power. This style is most frequently demonstrated through weekly meetings in which the full-time academy staff is provided opportunities to participate in the day-to-day management of the academy. Their input is sought before any decision is made which directly affects the operation of the organization, and certainly if it directly affects the individual employee.

For example, LEA1 was required to conduct a weekend only academy at one of the regional campuses approximately 100 miles from the Academy training facility. This required full-time staff to not only work many weekends, but to drive 200 miles round-trip to do so. Additionally, they were often required to spend the night. Instead of simply scheduling staff to work these weekends, several meetings were held to work out a schedule that was most sensitive to the needs of the employees. Ultimately, the staff put together the entire weekend work schedule based on what worked best for them. Such collaboration and concern for employee welfare by the administration at both academies certainly supports the human resource frame as defined by Bolman and Deal (2008).

Implications for Research in the Practitioner Setting

As mentioned earlier, the rules and regulations established by the Missouri POST Commission prohibit the use of online learning for any part of the core curriculum for basic

police officer training. Until recently it was understood this prohibition applied to all training hours during the basic police academy training – both core curriculum and supplemental training. As a result, online learning has never been utilized for any part of basic police training in the State of Missouri. However, it was recently determined the online prohibition applies only to the core curriculum, and not to the supplemental training which may be provided as part of the basic police academy training. Conducting online learning during this supplemental training and examining the benefits, drawbacks, and effectiveness of such training can significantly impact operations of law enforcement training academies in the State of Missouri. Additionally, if research determines online learning is an effective method of training delivery during the supplemental training, such findings may serve as a catalyst to allow online learning in the core curriculum as well.

Summary

Since 1987 and 1994 respectively, LEA1 and LEA2 has been responsible for training hundreds of students who have ultimately become certified police officers in Missouri. As part of a University and Community College, each academy's staff observed firsthand the proliferation of online learning at the post-secondary level since the late 1990's. The advantages and the effectiveness of this method of learning were well documented during this time period. However, online learning was not utilized as a method of training delivery for any part of the basic police officer training because the POST Commission, by rule, does not allow online learning as a method of instruction in the core curricula. Recently, it was decided that online learning may be permitted in the supplemental training provided as part of a student's basic police training. Examining the effectiveness of online learning in the supplemental training will offer significant

insight into the effectiveness of online learning in a basic police academy. Such insight will provide evidence to decision-makers who may ultimately consider changing the State-wide policy prohibiting online learning in the core curricula for basic police officer training.

SECTION THREE:
SCHOLARLY REVIEW FOR THE STUDY

Introduction

Defining the Learning Environment

Online learning is usually defined as a course of study where more than 80 percent of all content is delivered online, and there are no face-to-face meetings with instructors (Allen & Seaman, 2013). According to Means, Toyama, Murphy, and Baki (2013), “online learning overlaps with the broader category of distance learning, which encompasses earlier technologies such as correspondence courses, educational television, and videoconferencing” (p. 3).

Conceptually, online learning may be viewed as the next generation of distance learning which is designed to take advantage of the internet, as well as improvements in collaboration and communication technology (Taylor, 2001). Defined in this manner, online learning is designed to serve as a replacement for traditional face-to-face classroom instruction.

To further define online learning, Means et al. (2013) identified two characteristics often associated with online learning: pedagogical approach and the extent to which the activity is synchronous or asynchronous. Pedagogical approach was defined as identifying the source of learning content and the nature of the learning activity. For example, in a more traditional pedagogical approach the content is instructor directed and typically presented in the form of text, lecture, or instructor-led discussion. However, technology enhancements have resulted in a shift to more active learning where virtual interactions between learners and instructors are utilized. Synchronous activity describes whether or not the instruction occurs in real time, either in a physical or virtual place; while asynchronous involves a time lag between student receipt of instructional material and their response (Means et al., 2013).

Blended learning, sometimes referred to as hybrid learning, is a term used to describe a learning environment which combines the delivery methods of traditional face-to-face learning with online learning (Means et al., 2013). Horn and Staker (2011) defined blended learning as “any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace” (p. 3). The goal of blended learning is to provide the most efficient and effective learning experience through a “harmonious balance between online access to knowledge and face-to-face human interaction” (Osguthorpe & Graham, 2003). Such things as student characteristics, instructor background, course objectives, and online resources should be considered in an effort to find this proper balance for each course (Osguthorpe & Graham, 2003).

Online Learning in General

From a student learning perspective, most research in the area of online learning supports the hypothesis that there is no significant difference between online learning and traditional face-to-face methods of instruction. For example, in 2010, the United States Department of Education (USDE) released a study which reviewed more than 1,000 empirical studies of online learning from 1996 to 2008. The types of learners consisted mostly of college, community college, or graduate students; as well as adults receiving professional training. Each reviewed study contrasted an online to face-to-face method of learning, measured student learning outcomes, and used a rigorous research design. Based on this study, the USDE concluded that students in online conditions performed modestly better than those students learning the same material in a traditional face-to-face method; that students participating in blended classes involving both online and traditional face-to-face methods performed better than online only learning when

compared to traditional face-to-face methods; and the effectiveness of online learning spans a variety of content types and learner types (U. S. Department of Education, 2010). Similarly, Shachar and Neumann (2010) conducted a quantitative meta-analysis study spanning twenty years (from 1990 to 2009), and examined a total of 125 experimental and quasi-experimental studies with more than 20,000 participating students. Their findings concluded that students taking courses by distance education actually outperformed their student counterparts in traditional face-to-face classes. Final course grades were used to determine performance. A more recent study reviewing the literature on the effectiveness of online learning supported these conclusions (Kaufman, 2015).

In a qualitative study of student perception of online classes, Muilenburg and Berge (2005) surveyed over 1,000 students in an effort to determine the significance of 47 specific barriers to online learning. The strength of these barriers was compared to student specific variables such as gender, age, ethnicity, technical skills, etc. During the course of the survey, students with prior online educational experience were asked to report the effectiveness of their online learning. Sixty-six percent reported they could learn as well or better in an online environment, while 33 percent reported they did not learn as well in an online environment. When asked how much they enjoyed taking online classes, 69 percent enjoyed online learning about the same or more than classroom learning, while 31 percent enjoyed online learning less. The study further concluded that a lack of social interaction was the most severe barrier to online learning, and that learner motivation one of the more important barriers to success in online learning.

Research studies examining the effectiveness of online learning compared to traditional face-to-face learning, or blended learning, often explored personal characteristics of students which were predictive of both online success and high levels of satisfaction with their online learning experience. Some of these characteristics included: gender, age, educational level, locus of control, learning style, technology skills, self-efficacy, learning style, reading and writing skills, and self-directedness (Kerr, Rynearson, and Kerr, 2006; Yukselturk and Bulut, 2007). Although the research literature offers mixed results on most of these characteristics, level of self-directedness (sometimes referred to as self-regulation) seems to be one variable most consistently related to both online success and satisfaction with online learning (Colorado, 2010; Halicioglu, 2010; Kaufman, 2015; Kerr et al., 2006; Puzziferro, 2008; Wang, Shannon, and Ross, 2013; and Waschull, 2005).

Educational level was examined in the current study to determine if it was positively correlated with online learning success. This variable was chosen because it was found to be positively related to online success in one of the few research studies involving law enforcement officers. In his study, Donavant (2007) examined the effectiveness of online learning compared to traditional face-to-face learning for police officers participating in continuing education training in the State of Tennessee. His study found that online learning was as effective as face-to-face learning, and that educational level was a significant predictor of online success. Overall, however, education level does not appear to be a consistently strong predictor of success in an online learning environment. For example, in a study of Turkish police officers participating in an online community oriented policing training, Halicioglu (2010) found no significant relationship between education level and online learning success. Similarly, Colorado (2010) and

Yukselturk and Bulut (2007) found no significant correlation between level of education and online success for students attending either online graduate or undergraduate courses.

Online Learning in Non-law Enforcement Occupational Settings

The health care profession has a long history of requiring well developed educational programs that are rigorous, regulated, disciplined, and scrutinized. It is generally accepted that such educational structure will provide the most qualified health care providers to our communities (Barry, 2012; Frenk, et al., 2010). Since online learning has become an integral part of health care education (Cobb, 2004), numerous studies have been conducted to examine the effectiveness of this relatively new learning medium. For example, in a recent mixed methods study, Pullen (2013) examined learning by health care professionals (mostly physicians) who were enrolled in at least one of forty-two different online continuing medical education courses over a four month period of time. The courses were asynchronous, self-paced, and could last anywhere from a few hours to several months. To determine learning effectiveness, participants took a subject matter pre-test for the specific course in which they were enrolled. The pre-test results were compared to post-test results to determine the effectiveness of the online learning program. The results indicated a significant positive difference in mean pre-test and post-test scores, suggesting that learning occurred. In addition to the comparison of test scores, participant surveys suggested a majority believed their learning was enhanced through the online courses, and many participants actually used the new material in their professional practices (Pullen, 2013).

In a study examining the effectiveness of online learning for emergency room nurses, Rankin, Then, and Attack, (2013) utilized an experimental design in which 132 nurses

participating in an online triage course were randomly assigned to an experimental group or a control group. The students in the experimental group were required to work through a mandatory tutorial to ensure they understood how the web-based learning functioned, received a significant advantage (in grade points) for participating in online discussions, and were required to complete a triage workplace project. The project consisted of either presenting an in-service presentation to their colleagues, or to create a pamphlet or brochure covering the material learned during the online training. The overall purpose of the study was to determine whether web based learning impacted clinical practice by improving patient triage accuracy, and secondarily to determine if changes in a web-designed learning program enhanced learning. The results of the study indicated that all nurses participating in the online course successfully learned the course content, and indeed improved their triage skills. Of the three added conditions for the experimental group, the mandatory tutorial and enhanced rewards for participating in discussion groups did not appear to have an impact on learning. However, requiring the workplace project had a “major impact on the RN’s clinical and triage practices” (Rankin et al., 2013, p. 22).

The findings of these two studies are representative of much of the research examining the effectiveness of online learning in the health care profession. A meta-analysis of internet-based learning for health professionals by Cook et al. (2008) found that online learning was effective. In this analysis, a total of 201 quantitative studies were reviewed. The participants in these studies included both students and practicing professionals. Each study utilized an experimental design in which the learning outcomes for internet based learning were measured and compared to learning outcomes for traditional face-to-face learning. The results of the analysis found that internet based instruction was as effective as traditional learning methods

(Cook et al., 2008). A meta-analysis specifically related to online learning for nurses and nursing students produced parallel results. In this review, which consisted of eleven studies involving 2,491 nurses or nursing students, it was concluded that there was no statistical difference in knowledge, skills, or satisfaction when comparing traditional learning to online learning (Lahti, Hatonen, and Valimaki, 2014). Similarly, Salter, Karia, Sanfilippo, and Clifford (2014) conducted a systematic review of the literature to determine the effectiveness of online learning in pharmacy education in terms of learning, behavior, and results. Their review consisted of online learning in undergraduate, postgraduate, and continuing professional development educational courses. A total of seventeen studies which met the methodological standards identified by the authors were reviewed. Based upon their review, the authors concluded that online learning resulted in a significant enhancement of knowledge; and, that online learning was as effective as traditional face-to-face learning. Additionally, online learning resulted in increased professional confidence in performing tasks, as well as positive changes in skills and practice (Salter et al., 2014).

Online Learning in Law Enforcement

As previously mentioned, a review of the literature suggests a dearth of research comparing the effectiveness of online learning to traditional face-to-face instruction for students seeking basic peace officer certification in the United States. One reason for this is that many states simply do not allow online education for students attending basic law enforcement academies. For the few states that allow a portion of the basic police training to be taken online, no empirical evaluations of effectiveness were found. Thus, much of the online education research for law enforcement officers pertains to continuing education or professional

development. Unlike basic peace officer certification training, many states allow online training to meet continuing education requirements.

One such study conducted by Donavant (2009b) utilized both quantitative and qualitative methods to assess the feasibility of online education for professional development among police officers in Tennessee. Specific demographic variables were examined to determine their impact on the potential performance of police officers engaged in online education. Overall, the findings supported the hypothesis that online education was equally effective as traditional face-to-face methods. Statistically significant relationships were identified between online learning success and level of education, previous exposure to online education and age, with educational level and prior exposure showing positive relationships and age showing an inverse relationship. Additionally, it was noted that a majority of the participants in the study preferred online education to traditional instruction. The most attractive factors to participants were the “general convenience, the scheduling flexibility that was afforded by OE [online education], the access to educational opportunities from remote locations, and the ability to work at one’s own pace” (p. 234).

In a similar study conducted by the same author involving a national sampling of participants, Donavant (2009a) examined the differences in mean pre- and post-test scores of police training that was conducted online and the same police training that was conducted in a traditional face-to-face method. No significant difference in the effectiveness of either technique was noted. However, a statistically significant relationship was found to exist between the level of formal education and an officer’s potential for online learning success.

A recent study by Halicioglu (2010) involving the Turkish National Police also found that online training is effective in changing attitudes of police officers. This particular study focused on an online community oriented policing training program provided to the Turkish National Police. The primary purpose of the study was to examine the relationship between self-directedness and the outcomes of the training program. The outcomes were defined as “perceived learning level of officers, their satisfaction with the training program, and change in their attitudes toward community oriented policing” (p. 4). Other variables were also considered, including whether or not the training changed the officers’ attitude toward community oriented policing. An examination of pre-test and post-test scores on an attitudinal test revealed that online training was indeed effective in changing officer’s attitudes in a positive way. Additionally, the study found a significant relationship between an officer’s level of self-directedness and the previously mentioned outcomes.

Summary

The number of students taking online classes, and the number of professionals engaged in online continuing education, continues to grow at a rapid pace. Current research indicates online learning is as effective as traditional face-to-face methods of instruction in both the classroom and the work environment. A logical extension of these findings suggests that online learning would be an effective method of instruction for at least some topics in basic law enforcement certification training. However, the use of online learning in basic police training remains limited. In fact, a review of the literature found no research examining the effectiveness of online education in this environment, primarily because it is prohibited in many states. The limited research examining the effectiveness of online learning for continuing education in law

enforcement corroborates the vast majority of online education research in general; and suggests that it is an effective method of learning. Research is needed to determine whether these findings hold true for basic police officer recruit training. Such research would greatly benefit state policy-makers and police educators nationwide.

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SECTION FOUR:
CONTRIBUTION TO PRACTICE

Abstract

From a student learning perspective, a significant amount of empirical research over the past 20 years clearly suggests online learning is as effective as traditional instructor-led classroom learning. As a result, online learning has been adapted by many educational institutions and professional organizations as an effective learning alternative to traditional face-to-face learning. One educational domain in which online learning has been patently rejected is in law enforcement training academies which provide basic police officer certification training. Many states prohibit online learning in these institutions because policy-makers do not believe it is as effective as face-to-face learning. Consequently, there is a lack of empirical research examining the effectiveness of online learning in this setting. This quantitative analysis attempted to address this gap in the research by comparing average test scores of academy students randomly assigned to a four-hour block of training in either an online setting or a traditional face-to-face setting. In support of the literature, the results of this study found no significant difference in student learning when comparing test scores of the two groups. Additionally, there was no correlation discovered between educational level, self-directedness and online learning success.

Introduction / Background

A world-wide revolution in education is upon us. For centuries, instructor-led classrooms were central to the educational process for both children and adults. Today, this traditional classroom environment is rapidly being replaced; or, at the minimum, supplemented, by internet-based online learning (Marold, Gwynne, and Mareno, 2000). The past two decades have seen

explosive growth of online education in both k-12 and post-secondary educational institutions (Allen & Seaman, 2013; Barbour, M. et al., 2011). Additionally, more than 95 percent of all colleges and universities with a student population of 5,000 or more students offer online courses (Allen and Seaman, 2015), and in some states students may attend school from kindergarten through high school without ever stepping inside a traditional classroom. The corporate and professional world has experienced similar growth in online learning for continuing education purposes. Growth in this venue has tripled since 2000 (Means et al., 2013). Based on these facts, it seems clear that online learning has become an integral part of mainstream society (Harasim, 2000).

Many educational institutions providing basic law enforcement training for police officer certification, however, have rejected online learning strategies. Most states, including Missouri, simply do not allow it. A perception by policy makers that online learning is simply not as effective as traditional face-to-face classroom learning is the primary reason it is prohibited in this setting. Conversely, the use of online learning to satisfy requisite continuing education requirements for police officers has flourished in most states. In Missouri, for example, state law requires a minimum of 600 hours of training at a State approved training facility for individuals seeking police officer certification. As in many other states, a governor appointed Police Officer Standards and Training (POST) commission, in conjunction with the Director of the Missouri Department of Public Safety, is responsible for establishing most rules and regulations concerning law enforcement training. These rules include identifying the training topics which must be included in the core curriculum; the number of hours required for each topic; requirements for training academy and instructor certification; method of training delivery; etc.

Similar to most states, at no time has the Missouri POST commission allowed an online method of training delivery for any part of the mandatory 600 hour curriculum. However, Missouri currently allows twenty-two of the twenty-four hours of continuing education required annually to be satisfied via online learning.

Problem Statement

The prohibition of online learning as a method of instructional delivery in basic police training has resulted in the following problems:

- As the minimum number of hours required for basic police training increase, there is a concomitant increase in student tuition and other ancillary costs. The increase in tuition is needed for each academy to cover the cost of additional instruction. The increases in ancillary costs consist of student travel, food, and lodging required for the additional weeks of training.
- According to POST regulations, a student cannot be certified if they miss more than thirty hours of academy training. Students who reach this threshold due to unforeseen circumstances such as illness, injury, a death in the family, and so forth, are forced to withdraw from the academy and make up the hours missed in another academy session. This may delay the issuance of their certification for six months or longer, which may pose a significant financial hardship for the student.
- Many academies in the State offer part-time law enforcement academy training on evenings and weekends. The part-time academies are designed to serve numerous individuals interested in law enforcement careers who are currently working full-time and cannot afford to take months off without pay to attend a full-time academy. The

inflexibility and rigor of a part-time academy schedule where students meet three or four times a week for thirty weeks or more can be overwhelming to anyone interested in attending a part-time academy session.

- From an administrative perspective, there are circumstances in which academy classes need to be cancelled (primarily due to weather related events). With a rigorous schedule, including start and end dates that are difficult to modify, it is problematic to make-up more than a few hours missed due to these type events during the course of an academy session.

Online learning could attenuate each of these difficulties if allowed on a limited basis in the State mandated basic law enforcement training academies. Student costs would be minimized for both full and part-time academy students due to the fact that online training, once developed, can be continually delivered without the added cost of a classroom instructor. This cost savings in overall operational costs for an academy can be passed along to lower student tuition rates; or, at the minimum, minimize future increases in tuition. Additionally, students missing thirty hours or more of training due to legitimate, unforeseen circumstances, could make up hours and graduate on time; more flexibility would be available to part-time students wishing to change careers; and academy directors could build flexibility into their schedules to better contend with unforeseen events requiring class cancellations.

Review of Literature

A review of the literature related to online learning as it relates to this study is grouped into three categories. These three categories include (a) online learning in general, (b) online

learning in non-law enforcement occupational settings, and (c) online learning in law enforcement settings.

Online Learning in General

From a student learning perspective, most research in the area of online learning supports the hypothesis that there is no significant difference between online learning and traditional face-to-face methods of instruction. For example, in 2010, the United States Department of Education (USDE) released a study which reviewed more than 1,000 empirical studies of online learning from 1996 to 2008. The types of learners consisted mostly of college, community college, or graduate students; as well as adults receiving professional training. Each reviewed study contrasted an online to face-to-face method of learning, measured student learning outcomes, and used a rigorous research design. Based on this study, the USDE concluded that students in online conditions performed modestly better than those students learning the same material in a traditional face-to-face method; that students participating in blended classes involving both online and traditional face-to-face methods performed better than online only learning when compared to traditional face-to-face methods; and the effectiveness of online learning spans a variety of content types and learner types (U. S. Department of Education, 2010). Similarly, Shachar and Neumann (2010) conducted a quantitative meta-analysis study spanning twenty years (from 1990 to 2009), and examined a total of 125 experimental and quasi-experimental studies with more than 20,000 participating students. Their findings concluded that students taking courses by distance education actually outperformed their student counterparts in traditional face-to-face classes. Final course grades were used to determine performance. A

more recent study reviewing the literature on the effectiveness of online learning supported these conclusions (Kaufman, 2015).

In a qualitative study of student perception of online classes, Muilenburg and Berge (2005) surveyed over 1,000 students in an effort to determine the significance of 47 specific barriers to online learning. The strength of these barriers was compared to student specific variables such as gender, age, ethnicity, technical skills, etc. During the course of the survey, students with prior online educational experience were asked to report the effectiveness of their online learning. Sixty-six percent reported they could learn as well or better in an online environment, while 33 percent reported they did not learn as well in an online environment. When asked how much they enjoyed taking online classes, 69 percent enjoyed online learning about the same or more than classroom learning, while 31 percent enjoyed online learning less. The study further concluded that a lack of social interaction was the most severe barrier to online learning, and that learner motivation one of the more important barriers to success in online learning.

Research studies examining the effectiveness of online learning compared to traditional face-to-face learning, or blended learning, often explored personal characteristics of students which were predictive of both online success and high levels of satisfaction with their online learning experience. Some of these characteristics included: gender, age, educational level, locus of control, learning style, technology skills, self-efficacy, learning style, reading and writing skills, and self-directedness (Kerr, Ryneason, and Kerr, 2006; Yukselturk and Bulut, 2007). Although the research literature offers mixed results on most of these characteristics, level of self-directedness (sometimes referred to as self-regulation) seems to be one variable most

consistently related to both online success and satisfaction with online learning (Colorado, 2010; Halicioglu, 2010; Kaufman, 2015; Kerr et al., 2006; Puzziferro, 2008; Wang, Shannon, and Ross, 2013; and Waschull, 2005).

Educational level was examined in the current study to determine if it was positively correlated with online learning success. This variable was chosen because it was found to be positively related to online success in two of the few research studies involving law enforcement officers. In one study, Donavant (2009b) examined the effectiveness of online learning compared to traditional face-to-face learning for police officers participating in continuing education training in the State of Tennessee. His study found that online learning was as effective as face-to-face learning, and that educational level was a significant predictor of online success. In a similar study by the same author, Donavant (2009a) examined the differences in mean pre- and post-test scores of police training that was conducted online and the same police training that was conducted in a traditional face-to-face method. No significant difference in the effectiveness of either technique was noted. Furthermore, a statistically significant relationship was found to exist between the level of formal education and an officer's potential for online learning success.

Overall, however, education level does not appear to be a consistently strong predictor of success in an online learning environment. For example, in a study of Turkish police officers participating in an online community oriented policing training, Halicioglu (2010) found no significant relationship between education level and online learning success. Similarly, Colorado (2010) and Yukselturk and Bulut (2007) found no significant correlation between level of education and online success for students attending either online graduate or undergraduate courses.

Online Learning in Non-Law Enforcement Occupational Settings

The health care profession has a long history of requiring well developed educational programs that are rigorous, regulated, disciplined, and scrutinized. It is generally accepted that such educational structure will provide the most qualified health care providers to our communities (Barry, 2012; Frenk, et al., 2010). Since online learning has become an integral part of health care education (Cobb, 2004), numerous studies have been conducted to examine the effectiveness of this relatively new learning medium. For example, in a recent mixed methods study, Pullen (2013) examined learning by health care professionals (mostly physicians) who were enrolled in at least one of forty-two different online continuing medical education courses over a four month period of time. The courses were asynchronous, self-paced, and could last anywhere from a few hours to several months. To determine learning effectiveness, participants took a subject matter pre-test for the specific course in which they were enrolled. The pre-test results were compared to post-test results to determine the effectiveness of the online learning program. The results indicated a significant positive difference in mean pre-test and post-test scores, suggesting that learning occurred. In addition to the comparison of test scores, participant surveys suggested a majority believed their learning was enhanced through the online courses, and many participants actually used the new material in their professional practices (Pullen, 2013).

In a study examining the effectiveness of online learning for emergency room nurses, Rankin, Then, and Atack, (2013) utilized an experimental design in which 132 nurses participating in an online triage course were randomly assigned to an experimental group or a control group. The students in the experimental group were required to work through a

mandatory tutorial to ensure they understood how the web-based learning functioned, received a significant advantage (in grade points) for participating in online discussions, and were required to complete a triage workplace project. The project consisted of either presenting an in-service presentation to their colleagues, or to create a pamphlet or brochure covering the material learned during the online training. The overall purpose of the study was to determine whether web based learning impacted clinical practice by improving patient triage accuracy, and secondarily to determine if changes in a web-designed learning program enhanced learning. The results of the study indicated that all nurses participating in the online course successfully learned the course content, and indeed improved their triage skills. Of the three added conditions for the experimental group, the mandatory tutorial and enhanced rewards for participating in discussion groups did not appear to have an impact on learning. However, requiring the workplace project had a “major impact on the RN’s clinical and triage practices” (Rankin et al., 2013, p. 22).

The findings of these two studies are representative of much of the research examining the effectiveness of online learning in the health care profession. A meta-analysis of internet-based learning for health professionals by Cook et al. (2008) found that online learning was effective. In this analysis, a total of 201 quantitative studies were reviewed. The participants in these studies included both students and practicing professionals. Each study utilized an experimental design in which the learning outcomes for internet based learning were measured and compared to learning outcomes for traditional face-to-face learning. The results of the analysis found that internet based instruction was as effective as traditional learning methods (Cook et al., 2008). A meta-analysis specifically related to online learning for nurses and nursing students produced parallel results. In this review, which consisted of eleven studies involving

2,491 nurses or nursing students, it was concluded that there was no statistical difference in knowledge, skills, or satisfaction when comparing traditional learning to online learning (Lahti, Hatonen, and Valimaki, 2014). Similarly, Salter, Karia, Sanfilippo, and Clifford (2014) conducted a systematic review of the literature to determine the effectiveness of online learning in pharmacy education in terms of learning, behavior, and results. Their review consisted of online learning in undergraduate, postgraduate, and continuing professional development educational courses. A total of seventeen studies which met the methodological standards identified by the authors were reviewed. Based upon their review, the authors concluded that online learning resulted in a significant enhancement of knowledge; and, that online learning was as effective as traditional face-to-face learning. Additionally, online learning resulted in increased professional confidence in performing tasks, as well as positive changes in skills and practice (Salter et al., 2014).

Online Learning in Law Enforcement Settings

A review of the literature suggests a dearth of research comparing the effectiveness of online learning to traditional face-to-face instruction for students seeking basic peace officer certification in the United States. One reason for this is that many states simply do not allow online education for students attending basic law enforcement academies. For the few states that allow a portion of the basic police training to be taken online, no empirical evaluations of effectiveness were found. Thus, much of the online education research for law enforcement officers pertains to continuing education or professional development. Unlike basic peace officer certification training, many states allow online training to meet continuing education requirements.

One such study conducted by Donavant (2009b) utilized both quantitative and qualitative methods to assess the feasibility of online education for professional development among police officers in Tennessee. Specific demographic variables were examined to determine their impact on the potential performance of police officers engaged in online education. Overall, the findings supported the hypothesis that online education was equally effective as traditional face-to-face methods. Statistically significant relationships were identified between online learning success and level of education, previous exposure to online education and age, with educational level and prior exposure showing positive relationships and age showing an inverse relationship. Additionally, it was noted that a majority of the participants in the study preferred online education to traditional instruction. The most attractive factors to participants were the “general convenience, the scheduling flexibility that was afforded by OE [online education], the access to educational opportunities from remote locations, and the ability to work at one’s own pace” (p. 234).

In a similar study conducted by the same author, Donavant (2009a) examined the differences in mean pre- and post-test scores of police training that was conducted online and the same police training that was conducted in a traditional face-to-face method. No significant difference in the effectiveness of either technique was noted. However, a statistically significant relationship was found to exist between the level of formal education and an officer’s potential for online learning success.

A recent study by Halicioglu (2010) involving the Turkish National Police also found that online training is effective in changing attitudes of police officers. This particular study focused on an online community oriented policing training program provided to the Turkish

National Police. The primary purpose of the study was to examine the relationship between self-directedness and the outcomes of the training program. The outcomes were defined as “perceived learning level of officers, their satisfaction with the training program, and change in their attitudes toward community oriented policing” (p. 4). Other variables were also considered, including whether or not the training changed the officers’ attitude toward community oriented policing. An examination of pre-test and post-test scores on an attitudinal test revealed that online training was indeed effective in changing officer’s attitudes in a positive way. Additionally, the study found a significant relationship between an officer’s level of self-directedness and the previously mentioned outcomes.

Research Design

Setting

An experimental design was used to examine the effectiveness of online learning in two regional law enforcement training academies in Missouri, LEA1 and LEA2. Forty-two students from three cohorts at the LEA1 Academy, and fifteen students from two cohorts at the LEA2 Academy, volunteered to participate in the study. After eliminating one outlier, a total of fifty-six participating students were randomly assigned to either an experimental group or a control group. A four-hour block of training on the topic of human trafficking was developed and utilized to compare the effectiveness of online learning to traditional face-to-face learning. The experimental group received the four-hour block of training online, while the control group received a similar four-hour block of training in the traditional face-to-face format. To measure learning, students in both the experimental and control groups were tested in a classroom simultaneously using a twenty-five question multiple-choice paper / pencil test. Access to

training materials was not allowed during the testing process. To maintain consistency, the test was administered five days after the face-to-face training for each cohort of students. Although this time period was constant throughout the study for the control group, it was not consistent for the experimental group. Students in the online group had access to the training videos beginning the day before the face-to-face training was conducted until the time of the test. This is consistent with an online learning model, in which web-based materials are continuously available to students when they have internet access.

Limitations and Assumptions

Several limitations to this study have been identified. First, the law enforcement academy students sampled in this study were not representative of all law enforcement academy students. The population from which the sample was drawn for this study included students from five cohorts attending two different law enforcement training academies in a mid-western state over the course of one year. This limited sample may not accurately reflect law enforcement academy students in general, and therefore affects the generalizability of the study. Second, the sample size for this research was small ($N = 56$). As a result, statistically significant differences in test scores are less likely to be observed. Thus, the study is not as statistically strong as it might be with a larger sample. The small sample also affects the generalizability of results. Third, participation in this study was voluntary. Thus, the students who volunteered to participate may not be representative of the overall population of academy students enrolled at the time this study was conducted. Lastly, the RATTC scale used in this study to measure level of self-directedness is a self-report instrument and subject to problems associated with such instruments. Responses

to the questions require individual understanding, introspection and perceptions leading to responses which may be biased, inconsistent, or inaccurate.

One assumption associated with this research is that the instructor-developed exam accurately measured student learning outcomes.

Research Questions

This primary (#1) and secondary (#2 and #3) research questions for this study are:

1. How does online learning, compared to traditional face-to-face learning, impact student learning for students attending a basic law enforcement training academy?
2. What is the relationship between educational level attained and success in online learning as compared to traditional face-to-face learning?
3. What is relationship between self-directedness and success in online learning as compared to traditional face-to-face learning?

Data Analysis and Results

Two statistical analyses were used to answer the research questions examined in this study. An independent-samples t-test was calculated to determine whether there was a statistically significant difference between mean test scores of the experimental group (students participating in the four-hour block of online human trafficking training) and the control group (students participating in the same block of human trafficking training in a traditional instructor-led classroom setting). Pearson product-moment correlation coefficients were calculated to determine the relationship between self-directed learning, education level, and online success. There were no statistically significant relationships found between any of the variables. The

general descriptive characteristics of the participating students are presented in Table 1. The results of each analysis and research question observations are provided below.

Table 1
General Descriptive Statistics of Students Participating in Study

	<i>Frequency</i>	<i>Percent</i>
Gender		
Male	44	79%
Female	12	21%
Age		
20 - 24	30	54%
25 - 29	12	21%
30 - 34	4	7%
35 - 39	5	9%
40 plus	5	9%
College Hours		
None	10	19%
1 - 30	7	13%
31 - 60	9	17%
61 -90	7	13%
91 - 120	10	19%
120 plus	10	19%
College Degree		
None	31	64%
Associates	8	17%
Bachelors	8	17%
Masters	1	2%
Self-Directed Learning Score*		
30 - 35	9	19%
36 - 40	25	53%

41 - 45	10	21%
46 - 50	3	7%

**There were no self-directed learning scores < 30*

The first research question examined whether there was a difference in learning for students participating in online training compared to students participating in traditional face-to-face training while attending a basic law enforcement training academy. Table 2 provides the results of the independent-samples t-test comparing mean test scores of students who received online training (M = 21.68, SE = .530) to students who received training in the traditional face-to-face classroom environment (M = 21.75, SE = .37). This difference, 0.07 was not significant $t(54) = 0.111, p = .912$.

Table 2
Independent-Samples t-Test Comparing Online and Face-to-Face Test Scores

	<i>Levene's Test for Equality of Variances</i>		<i>t-test for Equality of Means</i>							
	<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>	<i>Std. Error Difference</i>	<i>95% Confidence Interval of the Difference</i>		
								<i>Lower</i>	<i>Upper</i>	
Test Scores	Equal variances assumed	2.647	.110	.111	54	.912	.071	.644	-1.219	1.362
	Equal variances not assumed			.111	47.993	.912	.071	.644	-1.223	1.366

The second and third research questions examined the relationship between education level, self-directed learning, and success in online learning. To determine the relationship between these variables, Pearson’s product moment correlation was calculated. There was no significant relationship between education level and success in online learning, $r = .158, p =$

.422. Similarly, there was no significant relationship between self-directed learning and online learning, $r = -.004$, $p = .985$.

Discussion

The primary goal of this study was to determine if online learning in a basic law enforcement training academy was as effective as traditional face-to-face learning. Although there is very little research in this specific setting, the literature examining the effectiveness of online learning in educational and other occupational environments overwhelmingly suggests online learning is at least as effective as face-to-face learning. This study supports these findings. Additionally, this analysis found that neither educational level nor level of self-directedness influenced online success in basic police training.

A closer look at the effectiveness of online learning in this study revealed that overall differences in learning as measured by test scores was very small. On a 25 point scale, there was less than one-tenth of one point difference between the mean scores of the experimental and control groups. A further breakdown of the results indicated that in three of the five cohorts the online learning students, on average, scored higher than those in the face-to-face environment. In the other two cohorts, students in the face-to-face learning scored higher. The breakdown of mean test scores between groups for each cohort is presented in Table 3.

It is interesting to note the mean test scores for the online group in Cohort 2 at LEA2. This was the only cohort consisting of students attending an academy on a part-time, evening basis. Although the average mean score for the students participating in the face-to-face learning was very similar to the other four cohorts, the mean score for the online group was 6.2 points lower than the mean for the other four online groups in this study. It should be noted, however,

this mean consisted of two student's scores. The mean test scores for the face-to-face group consisted of four student's scores. One student originally assigned to the online group was absent for the test and therefore his score was not included in the data. Additionally, the one outlier not included in the data analysis came from this same online group. Although a quick review of the numbers might suggest an online learning concern for students attending basic law enforcement training on a part-time basis, it would be impossible to draw any empirically sound conclusions with a dataset consisting of only two scores.

Table 3
Difference in Mean Test Scores for each Cohort

	<i>Mean Test Scores for Online Group</i>	<i>Mean Test Scores for Face-to-Face Group</i>	<i>Difference</i>
LEA 1			
Cohort 1 (N = 20)	20.9	22.3	1.4
Cohort 2 (N = 13)	23.28	22	1.28
Cohort 3 (N = 9)	22.6	20.25	2.35
LEA2			
Cohort 1 (N = 8)	22.5	21.75	0.75
Cohort 2 (N = 6)	16	21.5	3.5

Also in support of previous research, this study found no significant relationship between educational level and online success. As previously mentioned, in general, prior research does not support a strong and consistent relationship between these two variables. However, these findings contradict two of the very few studies examining online success in a law enforcement setting (Donavant, 2009a; Donavant, 2009b). One possible explanation why educational level may be more predictive of online success in a law enforcement setting is due to the relatively broad gap in educational backgrounds of law enforcement officers and law enforcement trainees.

When examining previous research exploring the relationship between online success and education level, many of the participants had relatively similar educational backgrounds. For example, studies examining online success in college settings typically involved students who, at the minimum, had taken some college courses. Studies examining the success of online learning in graduate school settings involved students with at least a Bachelor's Degree. Additionally, studies examining the effectiveness of online learning in occupational environments, such as doctors, nurses, attorneys, school teachers, pharmacists, etc., all involved participants with similar levels of education. As a result of the participants' relatively similar educational backgrounds in previous studies, the relationship between education and online success may have been more difficult to discern. Law enforcement, however, is a profession somewhat unique in that greater levels of educational disparity exist among practitioners as compared to other professions. There is a similar disparity among students attending basic law enforcement training. Although many law enforcement agencies prefer college educated police officers, and strongly encourage advanced study beyond a Bachelor's degree for supervisory positions, only one percent of all law enforcement agencies in the United States require a four-year college degree (Dempsey and Forst, 2016). Overall, less than 30 percent of all police officers have college degrees, and educational backgrounds range from GED to Ph.D. Similarly, as seen in this study, educational levels among law enforcement trainees often range from high school diplomas (or GED's) to Master's degrees. Although this study found no correlation between education and online success, based on previous research and the substantial level of educational disparity in this setting, this relationship is worthy of additional research.

Contrary to previous research which suggests a strong positive relationship between level of self-directedness and online success, this study found no significant relationship between these two variables. One possible explanation for this discrepancy is that most studies examining the relationship between self-directedness and online success involved students enrolled in semester-long courses where self-directed characteristics (e.g., effective time and resource management, the ability to plan one's own learning pace, evaluating individual learning progress, persistence, etc.) may play a much larger role in online learning success than when simply participating in a four-hour block of internet based training. Additional research further exploring this relationship is needed, particularly when students are engaged in longer durations of online learning.

Recommendations

Missouri policy currently prohibits the use of online learning as a method of training for basic police officer certification in state certified law enforcement training academies. The primary reason for this is that policy-makers do not believe online learning is as effective as face-to-face learning. As a result, several problems for both students and training academy administration have been identified. Research overwhelmingly supports the premise that online and blended learning is as effective as traditional face-to-face learning. The current research project, which was specific to basic law enforcement academy training, supported this research. Although research in this area is limited and should continue, these findings suggest that online learning for some courses in the basic 600 hour mandatory training curriculum could be allowed without compromising student learning. By allowing such training, direct benefits to both students and training academies would be realized.

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SECTION FIVE:
CONTRIBUTION TO SCHOLARSHIP

Title Page

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Manuscript Title: The Effectiveness of Online Learning in a Basic Law Enforcement Training Academy: A Quantitative Study

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Abstract: From a student learning perspective, a significant amount of empirical research over the past 20 years clearly suggests online learning is as effective as traditional instructor-led classroom learning. As a result, online learning has been adapted by many educational institutions and professional organizations as an effective learning alternative to traditional face-to-face learning. One educational domain in which online learning has been patently rejected is in law enforcement training academies which provide basic police officer certification training. Many states prohibit online learning in these institutions because policy-makers do not believe it is as effective as face-to-face learning. Consequently, there is a lack of empirical research examining the effectiveness of online learning in this setting. This quantitative analysis attempts to address this gap in the research by comparing average test scores of academy students randomly assigned to a four-hour block of training in either an online setting or a traditional face-to-face setting. In support of the literature, the results of this study found no significant difference in student learning when comparing test scores of the two groups. Additionally, there was no correlation discovered between educational level, self-directedness and online learning success.

Keywords: Online learning; internet based learning; police training; law enforcement academy training

Introduction

A world-wide revolution in education is upon us. For centuries, instructor-led classrooms were central to the educational process for both children and adults. Today, this traditional classroom environment is rapidly being replaced; or, at the minimum, supplemented, by internet-based online learning (Marold, Gwynne, and Mareno, 2000). The past two decades has seen explosive growth of online education in both k-12 and post-secondary educational institutions (Allen & Seaman, 2013; Barbour, M. et al., 2011). Based on an annual survey of online learning, the number of college students in the United States taking at least one online class increased from 1.6 million in 2002 to 6.7 million in 2011 (Allen & Seaman, 2013). This growth in online learning is not limited to the United States – it is indeed a global phenomenon (Barbour, M. et al., 2011). In fact, according to Harasim (2000) there has been a paradigm shift in attitudes concerning online learning. Based on her research, she concluded that “online learning is no longer peripheral or supplementary; it has become an integral part of mainstream society” (p. 59).

Online learning in non-school settings has experienced similar growth. For example, according to Means, Toyama, Murphy, and Baki (2013), since 2000, the use of online learning to satisfy educational and training requirements in the corporate world has nearly tripled. Online learning has also proven successful in such professions as medicine, dentistry, nursing, physical therapy, and pharmacy studies (George et al., 2014). However, the transition to online learning for basic police officer certification and training and has been more *evolutionary* than revolutionary. The use of online learning in this educational environment is nearly non-existent. For example, a recent review of twelve Midwestern states discovered that only one state utilized

online learning to provide more than one percent of its basic police officer training. One other state utilized online learning to provide ten hours of its 643 hour basic police training curriculum. The remaining ten states did not utilize online learning at all (Kinnison, 2017). Thus, it appears the paradigm shift toward online learning has failed to reach the world of basic law enforcement certification training. One particular mid-western state, which is representative of many states, provides a good illustration.

Law enforcement training requirements for individuals seeking police officer certification in this state has changed significantly during the past 40 years. The number of hours, the topics of training, instructor certification procedures, record retention policies, etc., have all changed during this period. Additionally, modifications to the core training curriculum occur on an annual basis as a result of changes in regulatory policies, statutory law, or case law. One thing, however, that has not changed is the *method* of training delivery. Since the inception of legislation mandating training for police officer certification, state imposed regulations require every hour of the mandatory training for basic law enforcement certification to be delivered in a traditional face-to-face classroom environment.

In contrast, regulations in this state allow online learning to satisfy continuing education requirements for police officers; and, to provide supplemental training in a basic law enforcement training academy. Supplemental training consists of any training provided in a basic academy session which is beyond the minimum number of training hours required by state law. For example, if a state requires 500 hours of training for police officer certification but the training academy in which a student attends provides 600 hours of training, the additional 100 hours is considered supplemental training.

For states prohibiting the use of online learning in their basic police certification training, several problems have emerged. First, an increase in hours has led to a predictable increase in both student tuition and other ancillary costs. The increase in tuition is needed for each academy to cover the cost of additional instruction. The increases in ancillary costs consist of student travel, food, and lodging required for the additional weeks of training.

Second, all states require law enforcement academy students to attend most every hour of training provided in a basic law enforcement academy. If a specified percentage of hours are missed due to unforeseen circumstances such as illness, injury, a death in the family, and so forth, the student is forced to withdraw from the academy and either make up the missed hours in another academy session or start over. This may delay the issuance of their certification for six months or longer, which may pose a significant financial hardship for the student.

Third, many academies throughout the country offer part-time law enforcement certification training, usually on evenings and weekends. The part-time academies are designed to serve individuals interested in law enforcement careers who work full-time and cannot afford to take months off without pay to attend a full-time academy. The inflexibility and rigor of a part-time academy schedule where students meet three or four times a week for thirty weeks or more can be overwhelming to anyone interested in attending a part-time academy session.

Fourth, from an administrative perspective, there are circumstances in which academy classes need to be cancelled (e.g., instructor illness, weather conditions, instructor absence for court appearance or other unforeseen obligations, etc.). With a rigorous schedule, including start and end dates that are difficult to modify, it is problematic to make-up more than a few hours missed due to these type events during the course of an academy session.

Lastly, online training can reduce overall operational costs for law enforcement academies. Once an online training program has been developed, the training can be delivered without the added cost of a classroom instructor. These cost savings can lead to lower student tuition rates; or, at the minimum, prevent or minimize future increases in tuition.

Each problem mentioned above would be lessened if online learning was allowed in basic law enforcement certification training. Student costs would be minimized for both full and part-time academy students; students missing more than the maximum number of training hours permitted due to legitimate, unforeseen events could make up hours and graduate on time; more flexibility would be available to part-time students wishing to change careers; academy directors could build flexibility into their schedules to better contend with unforeseen events requiring class cancellations; and cost savings to training academies would result in lowering, or at least stabilizing, student tuition rates.

However, many states are still hesitant to allow online learning in basic police training because policy-makers question whether online learning is as effective as traditional face-to-face learning. Although there are numerous studies in the field of education and training that provide ample evidence to support the argument that online learning is as effective as traditional face-to-face learning (U. S. Department of Education, 2010), no such relationship has been investigated in a basic law enforcement academy setting.

Literature Review

From a student learning perspective, most research in the area of online learning supports the hypothesis that there is no significant difference between online learning and traditional face-to-face methods of instruction. For example, in 2010, the United States Department of Education

(USDE) released a study which reviewed more than 1,000 empirical studies of online learning from 1996 to 2008. The types of learners consisted mostly of college, community college, or graduate students; as well as adults receiving professional training. Each reviewed study contrasted an online to face-to-face method of learning, measured student learning outcomes, and used a rigorous research design. Based on this study, the USDE concluded that students in online conditions performed modestly better than those students learning the same material in a traditional face-to-face method; that students participating in blended classes involving both online and traditional face-to-face methods performed better than online only learning when compared to traditional face-to-face methods; and the effectiveness of online learning spans a variety of content types and learner types (U. S. Department of Education, 2010). Similarly, Shachar and Neumann (2010) conducted a quantitative meta-analysis study spanning twenty years (from 1990 to 2009), and examined a total of 125 experimental and quasi-experimental studies with more than 20,000 participating students. Their findings concluded that students taking courses by distance education actually outperformed their student counterparts in traditional face-to-face classes. Final course grades were used to determine performance. A more recent study reviewing the literature on the effectiveness of online learning supported these conclusions (Kaufman, 2015).

In a qualitative study of student perception of online classes, Muilenburg and Berge (2005) surveyed over 1,000 students in an effort to determine the significance of 47 specific barriers to online learning. The strength of these barriers was compared to student specific variables such as gender, age, ethnicity, technical skills, etc. During the course of the survey, students with prior online educational experience were asked to report the effectiveness of their

online learning. Sixty-six percent reported they could learn as well or better in an online environment, while 33 percent reported they did not learn as well in an online environment. When asked how much they enjoyed taking online classes, 69 percent enjoyed online learning about the same or more than classroom learning, while 31 percent enjoyed online learning less. The study further concluded that a lack of social interaction was the most severe barrier to online learning, and that learner motivation one of the more important barriers to success in online learning.

Research studies examining the effectiveness of online learning compared to traditional face-to-face learning, or blended learning, often explored personal characteristics of students which were predictive of both online success and high levels of satisfaction with their online learning experience. Some of these characteristics included: gender, age, educational level, locus of control, learning style, technology skills, self-efficacy, learning style, reading and writing skills, and self-directedness (Kerr, Rynearson, and Kerr, 2006; Yukselturk and Bulut, 2007). Although the research literature offers mixed results on most of these characteristics, level of self-directedness (sometimes referred to as self-regulation) seems to be one variable most consistently related to both online success and satisfaction with online learning (Colorado, 2010; Halicioglu, 2010; Kaufman, 2015; Kerr et al., 2006; Puzifferro, 2008; Wang, Shannon, and Ross, 2013; and Waschull, 2005).

Educational level was examined in the current study to determine if it was positively correlated with online learning success. This variable was chosen because it was found to be positively related to online success in two of the few research studies involving law enforcement officers. In one study, Donavant (2009b) examined the effectiveness of online learning compared

to traditional face-to-face learning for police officers participating in continuing education training in the State of Tennessee. His study found that online learning was as effective as face-to-face learning, and that educational level was a significant predictor of online success. In a similar study by the same author, Donavant (2009a) examined the differences in mean pre- and post-test scores of police training that was conducted online and the same police training that was conducted in a traditional face-to-face method. No significant difference in the effectiveness of either technique was noted. Furthermore, a statistically significant relationship was found to exist between the level of formal education and an officer's potential for online learning success.

Overall, however, education level does not appear to be a consistently strong predictor of success in an online learning environment. For example, in a study of Turkish police officers participating in an online community oriented policing training, Halicioglu (2010) found no significant relationship between education level and online learning success. Similarly, Colorado (2010) and Yukselturk and Bulut (2007) found no significant correlation between level of education and online success for students attending either online graduate or undergraduate courses.

Online Learning in Non-law Enforcement Occupational Settings

The health care profession has a long history of requiring well developed educational programs that are rigorous, regulated, disciplined, and scrutinized. It is generally accepted that such educational structure will provide the most qualified health care providers to our communities (Barry, 2012; Frenk, et al., 2010). Since online learning has become an integral part of health care education (Cobb, 2004), numerous studies have been conducted to examine the effectiveness of this relatively new learning medium. For example, in a recent mixed methods

study, Pullen (2013) examined learning by health care professionals (mostly physicians) who were enrolled in at least one of forty-two different online continuing medical education courses over a four month period of time. The courses were asynchronous, self-paced, and could last anywhere from a few hours to several months. To determine learning effectiveness, participants took a subject matter pre-test for the specific course in which they were enrolled. The pre-test results were compared to post-test results to determine the effectiveness of the online learning program. The results indicated a significant positive difference in mean pre-test and post-test scores, suggesting that learning occurred. In addition to the comparison of test scores, participant surveys suggested a majority believed their learning was enhanced through the online courses, and many participants actually used the new material in their professional practices (Pullen, 2013).

In a study examining the effectiveness of online learning for emergency room nurses, Rankin, Then, and Attack, (2013) utilized an experimental design in which 132 nurses participating in an online triage course were randomly assigned to an experimental group or a control group. The students in the experimental group were required to work through a mandatory tutorial to ensure they understood how the web-based learning functioned, received a significant advantage (in grade points) for participating in online discussions, and were required to complete a triage workplace project. The project consisted of either presenting an in-service presentation to their colleagues, or to create a pamphlet or brochure covering the material learned during the online training. The overall purpose of the study was to determine whether web based learning impacted clinical practice by improving patient triage accuracy, and secondarily to determine if changes in a web-designed learning program enhanced learning. The results of the

study indicated that all nurses participating in the online course successfully learned the course content, and indeed improved their triage skills. Of the three added conditions for the experimental group, the mandatory tutorial and enhanced rewards for participating in discussion groups did not appear to have an impact on learning. However, requiring the workplace project had a “major impact on the RN’s clinical and triage practices” (Rankin et al., 2013, p. 22).

The findings of these two studies are representative of much of the research examining the effectiveness of online learning in the health care profession. A meta-analysis of internet-based learning for health professionals by Cook et al. (2008) found that online learning was effective. In this analysis, a total of 201 quantitative studies were reviewed. The participants in these studies included both students and practicing professionals. Each study utilized an experimental design in which the learning outcomes for internet based learning were measured and compared to learning outcomes for traditional face-to-face learning. The results of the analysis found that internet based instruction was as effective as traditional learning methods (Cook et al., 2008). A meta-analysis specifically related to online learning for nurses and nursing students produced parallel results. In this review, which consisted of eleven studies involving 2,491 nurses or nursing students, it was concluded that there was no statistical difference in knowledge, skills, or satisfaction when comparing traditional learning to online learning (Lahti, Hatonen, and Valimaki, 2014). Similarly, Salter, Karia, Sanfilippo, and Clifford (2014) conducted a systematic review of the literature to determine the effectiveness of online learning in pharmacy education in terms of learning, behavior, and results. Their review consisted of online learning in undergraduate, postgraduate, and continuing professional development educational courses. A total of seventeen studies which met the methodological standards

identified by the authors were reviewed. Based upon their review, the authors concluded that online learning resulted in a significant enhancement of knowledge; and, that online learning was as effective as traditional face-to-face learning. Additionally, online learning resulted in increased professional confidence in performing tasks, as well as positive changes in skills and practice (Salter et al., 2014).

Online Learning in Law Enforcement

As previously mentioned, a review of the literature suggests a dearth of research comparing the effectiveness of online learning to traditional face-to-face instruction for students seeking basic peace officer certification in the United States. One reason for this is that many states simply do not allow online education for students attending basic law enforcement academies. For the few states that allow a portion of the basic police training to be taken online, no empirical evaluations of effectiveness were found. Thus, much of the online education research for law enforcement officers pertains to continuing education or professional development. Unlike basic peace officer certification training, many states allow online training to meet continuing education requirements.

One such study conducted by Donavant (2009b) utilized both quantitative and qualitative methods to assess the feasibility of online education for professional development among police officers in Tennessee. Specific demographic variables were examined to determine their impact on the potential performance of police officers engaged in online education. Overall, the findings supported the hypothesis that online education was equally effective as traditional face-to-face methods. Statistically significant relationships were identified between online learning success and level of education, previous exposure to online education and age, with educational level and

prior exposure showing positive relationships and age showing an inverse relationship. Additionally, it was noted that a majority of the participants in the study preferred online education to traditional instruction. The most attractive factors to participants were the “general convenience, the scheduling flexibility that was afforded by OE [online education], the access to educational opportunities from remote locations, and the ability to work at one’s own pace” (p. 234).

In a similar study conducted by the same author involving a national sampling of participants, Donavant (2009a) examined the differences in mean pre- and post-test scores of police training that was conducted online and the same police training that was conducted in a traditional face-to-face method. No significant difference in the effectiveness of either technique was noted. However, a statistically significant relationship was found to exist between the level of formal education and an officer’s potential for online learning success.

A recent study by Halicioglu (2010) involving the Turkish National Police also found that online training is effective in changing attitudes of police officers. This particular study focused on an online community oriented policing training program provided to the Turkish National Police. The primary purpose of the study was to examine the relationship between self-directedness and the outcomes of the training program. The outcomes were defined as “perceived learning level of officers, their satisfaction with the training program, and change in their attitudes toward community oriented policing” (p. 4). Other variables were also considered, including whether or not the training changed the officers’ attitude toward community oriented policing. An examination of pre-test and post-test scores on an attitudinal test revealed that online training was indeed effective in changing officer’s attitudes in a positive way.

Additionally, the study found a significant relationship between an officer's level of self-directedness and the previously mentioned outcomes.

Current Study

The purpose of this study is to examine the relationship between online learning and traditional face-to-face learning in a basic police training academy environment. As noted, there is an abundance of literature which supports the hypothesis that online learning is equally effective as traditional face-to-face learning. Similar research in the field of law enforcement is limited, and the research centers primarily on the effectiveness of online learning in a continuing education or professional development capacity. However, this research is also limited. As Donavant (2009) pointed out, "the literature on the use of OE [online education] for police training is very primitive, even in relation to other professions, and there is a need for empirical studies that evaluate the efficacy of online delivery methods in this area" (p. 226).

Understandably, training topics such as firearms, defensive tactics, handcuffing techniques, etc., are not practical to teach in an online learning environment. Proficiency in these topics requires hands-on, face-to-face interaction with an instructor. For this reason, the purpose of this study can be further narrowed to an examination of the relationship between online learning and traditional face-to-face learning for course topics conducive to an online learning format. The relationship between student educational background, level of self-directedness and online learning success will also be analyzed.

Research Questions

This study addressed the following primary (#1) and secondary (#2 and #3) research questions:

1. How does online learning, compared to traditional face-to-face learning, impact student learning for students attending a basic law enforcement training academy?
2. What is the relationship between educational level attained and success in online learning as compared to traditional face-to-face learning?
3. What is the relationship between self-directedness and success in online learning as compared to traditional face-to-face learning?

The study examined the following hypotheses:

H₀: There will be no statistically significant difference in test scores for students receiving instruction in an online method of course content delivery than for students receiving instruction in a traditional face to face method of course content delivery in a basic law enforcement training academy.

H₀: Level of education will result in no statistically significant difference in test scores for students receiving instruction in an online format or a traditional face-to-face format while attending basic law enforcement academy training.

H₀: Level of self-directedness will result in no statistically significant difference in test scores for students receiving instruction in an online format or a traditional face-to-face format while attending basic law enforcement academy training.

Methods

This study was conducted at two law enforcement training academies in a Midwestern state – the LEA1 Academy and the LEA2 Academy. A total of fifty-seven students from five separate cohorts of students participated in the study. Participants attending the LEA1 Academy were selected from three cohorts attending consecutive full-time academy training sessions.

Participants attending the LEA2 Academy were selected from two cohorts attending basic law enforcement training simultaneously – one full-time cohort and one part-time cohort. Very specifically, the students at both academies were participating in supplemental training provided by both academies as part of the basic law enforcement training curriculum.

After eliminating one outlier, a total of fifty-six participating students were randomly assigned to either the experimental group or the control group – twenty-eight students were assigned to the experimental group, and twenty-eight students were assigned to the control group. A four-hour block of training on the topic of human trafficking was developed and utilized to compare the effectiveness of online learning to traditional face-to-face learning. The experimental group received the four-hour block of training online, while the control group received a similar four-hour block of training in the traditional face-to-face format. The face-to-face training was provided by the same instructor who created the online training module (the instructor was the principle investigator and author of this research project). To measure learning, students in both the experimental and control groups were simultaneously tested in a classroom using a twenty-five question multiple-choice paper / pencil test. Access to training materials was not allowed during the testing process. To maintain consistency, the test was administered five days after the face-to-face training for each cohort of students. Although this time period was constant throughout the study for the control group, it was not consistent for the experimental group. Students in the online group had access to the training videos beginning the day before the face-to-face training was conducted until the time of the test. This is consistent with an online learning model, in which web-based materials are continuously available to students when they have internet access.

Instrumentation

The test used to measure student learning was a twenty-five question, four-alternative multiple-choice exam which was constructed by the author. Reliability of the multiple choice exam was assessed through a pilot test administered in a traditional face-to-face criminal investigations class consisting of twenty-two college students of similar age, race and gender to a majority of law enforcement academy students. Internal consistency of the pilot exam was measured using Cronbach's alpha. Although there is no specific threshold, the generally accepted standard for most classroom exams is a reliability coefficient of 0.70 or higher (Champlain, 2010; Wells and Wallach). The value of Cronbach's alpha for the pilot exam was 0.77, which suggests an acceptable level of internal consistency.

The instrument used to measure self-directedness in this study was the Resource Associates Transition to College (RATTC) Self-Directed Learning Scale. This scale was developed as part of the larger RATTC inventory, which is a personality assessment designed to measure the Big Five Traits of openness, conscientiousness, extroversion, agreeableness, and neuroticism for adolescents and adults (Lounsbury & Gibson, 2006). The RATTC Self-Directed Learning scale consists of ten questions with a five point Likert-scale response, ranging from strongly disagree to strongly agree. The scale measures learner self-direction as a personality trait "reflecting individuals' preference to be in charge of his or her learning process, ability to conceptualize, plan, implement, and evaluate one's academic experience; and disposition to be goal-oriented and to work independently or in group settings with little guidance" (Kirwan, Lounsbury, & Gibson, 2014, p. 3). As a variable, self-direction is measured on a continuum from low to high, instead of as a categorical or nominal variable (Kirwan et al., 2014). For each

question on the scale, the following values were assigned to each response: “1” for Strongly Disagree, “2” for Disagree, “3” for Neutral/Undecided, “4” for Agree, and “5” for Strongly Agree. These items were then summed for each individual survey to determine each participant’s self-directed learning score.

To determine educational level attained, a simple survey instrument was utilized to gather data. Each participant was asked to indicate their total number of college hours accumulated and their highest educational degree attained.

Data Analysis and Results

Two statistical analyses were used to answer the research questions examined in this study. An independent-samples t-test was calculated to determine whether there was a statistically significant difference between mean test scores of the experimental group and the control group. Pearson product-moment correlation coefficients were calculated to determine the relationship between self-directed learning, education level, and online success. There were no statistically significant relationships found between any of the variables. The general descriptive characteristics of the participating students are presented in Table 1. The results of each analysis and research question observations are provided below.

Table 1
General Descriptive Statistics of Students Participating in Study

	<i>Frequency</i>	<i>Percent</i>
Gender		
Male	44	79%
Female	12	21%
Age		
20 - 24	30	54%
25 - 29	12	21%

30 - 34	4	7%
35 - 39	5	9%
40 plus	5	9%
College Hours		
None	10	19%
1 - 30	7	13%
31 - 60	9	17%
61 -90	7	13%
91 - 120	10	19%
120 plus	10	19%
College Degree		
None	31	64%
Associates	8	17%
Bachelors	8	17%
Masters	1	2%
Self-Directed Learning Score*		
30 - 35	9	19%
36 - 40	25	53%
41 - 45	10	21%
46 - 50	3	7%

*There were no self-directed learning scores < 30

The first research question examined whether there was a difference in learning for students participating in online training compared to students participating in traditional face-to-face training while attending a basic law enforcement training academy. Table 2 provides the results of the independent-samples t-test comparing mean test scores of students who received online training ($M = 21.68$, $SE = .530$) to students who received training in the traditional face-to-face classroom environment ($M = 21.75$, $SE = .37$). This difference, 0.07 was not significant

$t(54) = 0.111, p = .912$. Thus, the null hypothesis, which stated there would be no difference in test scores between the experimental and control groups, must be accepted.

Table 2

Independent-Samples t-Test Comparing Online and Face-to-Face Test Scores

	<i>Levene's Test for Equality of Variances</i>		<i>t-test for Equality of Means</i>							
	<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>	<i>Std. Error Difference</i>	<i>95% Confidence Interval of the Difference</i>		
								<i>Lower</i>	<i>Upper</i>	
Test Scores	Equal variances assumed	2.647	.110	.111	54	.912	.071	.644	-1.219	1.362
	Equal variances not assumed			.111	47.993	.912	.071	.644	-1.223	1.366

The second and third research questions examined the relationship between education level, self-directed learning, and success in online learning. To determine the relationship between these variables, Pearson’s product moment correlation was calculated. There was no significant relationship between education level and success in online learning, $r = .158, p = .422$. Similarly, there was no significant relationship between self-directed learning and online learning, $r = -.004, p = .985$. Therefore, the null hypotheses for research questions two and three, respectively stating there would be no relationship between level of education and test scores, and no relationship between level of self-directedness and test scores, must be accepted.

Discussion

The primary goal of this study was to determine if online learning in a basic law enforcement training academy was as effective as traditional face-to-face learning. Although there is very little research in this specific setting, the literature examining the effectiveness of

online learning in educational and other occupational environments overwhelmingly suggests online learning is at least as effective as face-to-face learning. This study supports these findings. Additionally, this analysis found that neither educational level nor level of self-directedness influenced online success in basic police training.

A closer look at the effectiveness of online learning in this study revealed that overall differences in learning as measured by test scores was very small. On a 25 point scale, there was less than one-tenth of one point difference in the mean scores. A further breakdown of the results indicated that in three of the five cohorts, the online learning students, on average, scored higher than those in the face-to-face environment. In the other two cohorts, students in the face-to-face learning scored higher. The breakdown of mean test scores between groups for each cohort is presented in Table 3.

Table 3
Difference in Mean Test Scores for each Cohort

	<i>Mean Test Scores for Online Group</i>	<i>Mean Test Scores for Face-to-Face Group</i>	<i>Difference</i>
LEA 1			
Cohort 1 (N = 20)	20.9	22.3	1.4
Cohort 2 (N = 13)	23.28	22	1.28
Cohort 3 (N = 9)	22.6	20.25	2.35
LEA2			
Cohort 1 (N = 8)	22.5	21.75	0.75
Cohort 2 (N = 6)	16	21.5	3.5

It is interesting to note the mean test scores for the online group in Cohort 2 at LEA2. This was the only cohort consisting of students attending an academy on a part-time, evening basis. Although the average mean score for the students participating in the face-to-face learning

was very similar to the other four cohorts, the mean score for the online group was 6.2 points lower than the mean for the other four online groups in this study. It should be noted, however, this mean consisted of two student's scores. The mean test scores for the face-to-face group consisted of four student's scores. One student originally assigned to the online group was absent for the test and therefore his score was not included in the data. Additionally, the one outlier not included in the data analysis came from this same online group. Although a quick review of the numbers might suggest an online learning concern for students attending basic law enforcement training on a part-time basis, it would be impossible to draw any empirically sound conclusions with a dataset consisting of only two scores.

Also in support of previous research, this study found no significant relationship between educational level and online success. As previously mentioned, in general, prior research does not support a strong and consistent relationship between these two variables. However, these findings contradict two of the very few studies examining online success in a law enforcement setting (Donavant, 2009a; Donavant, 2009b). One possible explanation why educational level may be more predictive of online success in a law enforcement setting is due to the relatively broad gap in educational backgrounds of law enforcement officers and law enforcement trainees. When examining previous research exploring the relationship between online success and education level, many of the participants had relatively similar educational backgrounds. For example, studies examining online success in college settings typically involved students who, at the minimum, had taken some college courses. Studies examining the success of online learning in graduate school settings involved students with at least a Bachelor's Degree. Additionally, studies examining the effectiveness of online learning in occupational environments, such as

doctors, nurses, attorneys, school teachers, pharmacists, etc., all involved participants with comparable levels of education. As a result of the participants' relatively similar educational backgrounds in previous studies, the relationship between education and online success may have been more difficult to discern. Law enforcement, however, is a profession somewhat unique in that greater levels of educational disparity exist among practitioners as compared to other professions. There is a similar disparity among students attending basic law enforcement training. Although many law enforcement agencies prefer college educated police officers, and strongly encourage advanced study beyond a Bachelor's degree for supervisory positions, only one percent of all law enforcement agencies in the United States require a four-year college degree (Dempsey and Forst, 2016). Although it is difficult to accurately determine the percentage of police officers with college degrees, in one recent study of seven urban police departments, approximately forty-five percent of the officers had a Bachelor's Degree or higher even though they were not required (Paoline III, Terrill, & Ressler, 2015). Overall, educational backgrounds of police officers in the United States range from GED to Ph.D. Similarly, as seen in this study, educational levels among law enforcement trainees often range from high school diplomas (or GED's) to Master's degrees. Although this study found no correlation between education and online success, based on previous research and the substantial level of educational disparity in this setting, this relationship is worthy of additional research.

Contrary to previous research which suggests a strong positive relationship between level of self-directedness and online success, this study found no significant relationship between these two variables. One possible explanation for this discrepancy is that most studies examining the relationship between self-directedness and online success involved students

enrolled in semester-long courses where self-directed characteristics (e.g., effective time and resource management, the ability to plan one's own learning pace, evaluating individual learning progress, persistence, etc.) may play a much larger role in online learning success than when simply participating in a four-hour block of internet based training. Additional research further exploring this relationship is needed, particularly when students are engaged in longer durations of online learning.

Limitations and Assumptions

Several limitations to this study have been identified. First, the law enforcement academy students sampled in this study were not representative of all law enforcement academy students. The population from which the sample was drawn for this study included students from five cohorts attending two different law enforcement training academies in a mid-western state over the course of one year. This limited sample may not accurately reflect law enforcement academy students in general, and therefore affects the generalizability of the study. Second, the sample size for this research was small ($N = 56$). As a result, statistically significant differences in test scores are less likely to be observed. Thus, the study is not as statistically strong as it might be with a larger sample. Such a small sample size also affects the generalizability of results. Third, participation in this study was voluntary. Accordingly, the students who volunteered to participate may not be representative of the overall population of academy students enrolled at the time this study was conducted. Lastly, the RATTC scale used in this study to measure level of self-directedness is a self-report instrument and subject to problems associated with such instruments. Responses to the questions require individual understanding and perceptions of themselves which may be biased and inaccurate.

One assumption associated with this research is that the instructor-developed exam accurately measured student learning outcomes.

Conclusion

Research overwhelmingly supports the premise that online learning is as effective, if not more effective, than traditional face-to-face learning in both educational and occupational environments. As a result, the utilization of online learning has increased significantly in these settings during the past twenty years. However, for students pursuing basic police officer certification in law enforcement training academies across the country, the use of online learning has been eschewed. There is a concern among policy-makers in many states that online learning is simply not as effective as traditional face-to-face learning. Consequently, there is a lack of empirical research examining the effectiveness of online learning in this setting. This quantitative study attempts to partially fill that gap. The findings of this research project are in support of previous literature, and suggest that online learning is as effective as face-to-face learning in a basic law enforcement academy environment. Additionally, there was no relationship between level of education and level of self-directedness to online learning success. Thus, policy-makers who have been hesitant to allow online learning in basic law enforcement academy training may use these findings to allow a limited use of online training without fear of compromising student learning.

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SECTION SIX:
SCHOLARLY PRACTITIONER REFLECTION

Reflection

This reflection will discuss how the dissertation process has impacted me as an educational leader and as a scholar.

Dissertation Influence as an Educational Leader

Writing my dissertation, as well as participating in the coursework of this doctoral program, had a very immediate positive and practical impact on my educational leadership practices as both a law enforcement training academy director and as a leader / instructor in a college classroom. As an academy director I found myself re-evaluating my leadership style through each of the four frames (structure, human resource, political, and symbolic) discussed in one of our text books (Bolman and Deal, 2008). I became very aware of the significance of each frame from a leadership perspective, and I was very cognizant of each while working through issues of organization, management, and leadership in my Director's role.

Writing my dissertation was equally beneficial. My topic very specifically addressed learning within a law enforcement academy environment. My conceptual framework focused on three of the more prominent theories of adult learning: andragogy, self-directed learning, and transformative learning. I was not familiar with these theories prior to this course of instruction. While researching my conceptual framework, however, I became intimately familiar with each of these theories. As a result, I was able to incorporate what I considered to be the most functional theoretical principles of each theory into the development of lesson plans and other course-related training materials. I truly believe the academy curriculum is stronger today than prior to my dissertation research.

Additionally, as an academy director at a Missouri state certified law enforcement training academy, writing my dissertation has placed me in a better position to change State policy concerning methods of instruction in basic law enforcement academies throughout the State. As discussed in my dissertation, current policy in the State of Missouri prohibits the use of any online learning in the 600 hour mandatory training curriculum for police officer certification. The primary reason for this is a belief among policy makers that online learning is not as effective as traditional face-to-face learning. As the Director of one of nineteen certified training academies in Missouri, I would like to change this mindset -- and ultimately change the state policy so that at least a small portion of the mandatory training could be provided online. Writing my dissertation has better prepared me to pursue this goal with State policy makers in two ways. First, researching the current literature has provided me with substantial empirical data supporting the hypothesis that online learning is as effective as face-to-face learning in both educational and occupational settings. Although there is a dearth of empirical data specifically related to policing, there is no reason to believe research demonstrating successful use of online learning in both educational and occupational environments could not be extrapolated to the occupation of policing. Second, my dissertation research is not only in support of literature on the success of online learning, but specifically demonstrates the effectiveness of online learning in a basic law enforcement training academy. This makes it even more reasonable to conclude online learning in this environment can be effective; and thereby strengthens my position to initiate a conversation which may ultimately alter state policy. In fact, I have already been in contact with State employees and policy makers to discuss my findings to see if there may be any interest in re-visiting this issue.

As a leader / instructor in a college classroom, writing my dissertation has also had a favorable impact. As mentioned previously, I became intimately familiar with three primary adult learning theories. As a result, I have been able to incorporate learning strategies grounded in these theories to improve learning success in all my classes (face-to-face, blended, and online). Additionally, as part of my literature review, I analyzed previous research in the area of online learning. Much of this literature not only analyzed the effectiveness of online learning, but examined the effectiveness of a variety of online pedagogical strategies, such as the amount of student collaboration, types of assignments, group work, etc. As a result, I have modified my online classes in an effort to incorporate empirically sound online learning strategies to enhance learning success.

One last very practical area in which writing my dissertation benefited me as an academy director and a leader in the classroom is by strengthening my learning assessment skills, specifically in the area of writing and evaluating multiple-choice test questions. Prior to writing my dissertation, my skills for writing multiple-choice questions were limited. I had very little educational background or training in the craft of constructing quality test questions. Since I used a multiple-choice test to assess learning in my research, I became very familiar with accepted rules and guidelines for creating quality questions. Additionally, I became quite familiar with statistical methods used to evaluate the reliability and validity of multiple-choice exams once the test was administered. Prior to my research, terms such as reliability coefficient, item difficulty, item discrimination, etc. were completely foreign to me. However, I now use these analyses on a consistent basis to evaluate the effectiveness of all my multiple choice exams in the college

classroom, and I am planning to adapt the same guidelines for multiple-choice questions in the Academy.

Dissertation Influence as a Scholar

Overall, I think the most important way the dissertation process has influenced me as a scholar is by giving me the confidence to engage in research activities which can not only be shared in the classroom, but with other professionals, researchers, and academicians in my chosen field. The fact is I have never really considered myself *scholarly*. To the contrary, I would often read professional and academic journals, or listen to researchers presenting their findings conferences or meetings, and view the authors with great respect and admiration. I never considered, however, that I could reach their level of success in conducting research and sharing results with not only students in the classroom, but with other academicians and practitioners in my field. It was not an easy transformation, but it did occur.

Writing my dissertation forced me to familiarize myself with the fundamentals of the research process. Although this process seemed overwhelming, I learned the most important step was identifying a topic of interest, reviewing the existent literature, and developing a series of very specific research questions in which the answers would significantly contribute to the current field of knowledge. Once the research questions were developed, the remaining steps in the research process tend to fall readily into place. The process which seemed so overwhelming for so long now seems very manageable.

Practically speaking, writing my dissertation provided substantial experience which contributed greatly to the continued development of the confidence I mentioned above. Things such as reading copious amounts of scholarly literature, completing an IRB application,

administering the consenting process to potential participants of my study, requesting permission to use copyrighted material, using SPSS, using all available databases to search for related articles, and more, all led to an experience which significantly influenced my scholarly ambitions in a very positive way. In support of this claim, I will be presenting my dissertation research findings at the Academy of Criminal Justice Sciences conference in March, 2017.

Appendix A

Participant Consent Form

CONSENT FORM TO PARTICIPATE IN A RESEARCH STUDY

Researcher's Name(s): Carl Kinnison

Project Number:

Project Title: The Effectiveness of Online Learning in a Basic Law Enforcement Training Academy: A Quantitative Study

INTRODUCTION

This consent may contain words that you do not understand. Please ask the investigator or the study staff to explain any words or information that you do not clearly understand.

You are being asked to participate in a research study. This research is being conducted to determine the effectiveness of online learning in a law enforcement training academy. When you are invited to participate in research, you have the right to be informed about the study procedures so that you can decide whether you want to consent to participation. This form may contain words that you do not know. Please ask the researcher to explain any words or information that you do not understand.

You have the right to know what you will be asked to do so that you can decide whether or not to be in the study. Your participation is voluntary. You do not have to be in the study if you do not want to. You may refuse to be in the study and nothing will happen. If you do not want to continue to be in the study, you may stop at any time without penalty or loss of benefits to which you are otherwise entitled.

WHY IS THIS STUDY BEING DONE?

The purpose of this research is to determine the effectiveness of online learning, as compared to traditional face-to-face learning, in a basic law enforcement training academy.

HOW MANY PEOPLE WILL BE IN THE STUDY?

Between 50 and 75 people will take part in this study at this institution. It's possible another 30 to 60 students may participate in this study at other law enforcement academies in the State of Missouri.

WHAT AM I BEING ASKED TO DO?

If you agree to participate in this study, you will be randomly assigned to either a control group or an experimental group for one four-hour block of training on the topic of human trafficking.

The experimental group will receive the 4 hour block of training through online delivery, while the control group will receive the 4 hour block of training in the traditional face-to-face classroom setting.

Within one week of participating in the human trafficking awareness training, you will take a multiple choice test consisting of 25 questions over the material covered. If you choose to participate in the research, your score on this test will be used to calculate the average score of all students in the group you have been assigned (the experimental group or the control group). The average test scores of the two groups will then be compared to determine if there is a significant difference in test scores.

HOW LONG WILL I BE IN THE STUDY?

This study will take approximately 4.5 hours to complete.

WHAT ARE THE RISKS OF BEING IN THE STUDY?

There are minimal risks associated with being part of this study.

WHAT ARE THE COSTS OF BEING IN THE STUDY?

There is no cost to you.

WHAT OTHER OPTIONS ARE THERE?

You have the option to not participate in this study. If you choose to not participate, your exam score will not be used as part of this research. Since the four hour block of training on human trafficking is part of the course curriculum, you will still be required to participate in the training provided in the traditional face-to-face manner, and your score will be maintained in your file in the same manner as all your other exam scores. It will not, however, be used as part of this research project. Also, if you choose not to participate in this study, your grade and overall standing in the Academy will not be affected in any way.

CONFIDENTIALITY

According to Missouri State law, your record of training, including the number of hours, the topics, and your grade, must be maintained by the [*name of specific academy*]. However, your records are private and are maintained in a locked file cabinet. Only members of the [*specified academy*] staff will have access to your records. Other than academy staff, your records are only available to you (or an agency in which you request they be sent), to auditors of the Missouri Department of Public Safety while conducting academy compliance audits, and through any court ordered subpoena.

WILL I BE COMPENSATED FOR PARTICIPATING IN THE STUDY?

You will receive no payment for taking part in this study.

WHAT ARE MY RIGHTS AS A PARTICIPANT?

Participation in this study is voluntary. You do not have to participate in this study.

You will also be informed of any new information discovered during the course of this study that might influence your health, welfare, or willingness to be in this study.

WHO DO I CONTACT IF I HAVE QUESTIONS, CONCERNS, OR COMPLAINTS?

Please contact Carl Kinnison at 573-986-7369, (or email: ckinnison@semo.edu) if you have questions about the research. Additionally, you may ask questions, voice concerns or complaints to Dr. David Stader at 573-651-4944 (or email: dstader@semo.edu).

WHOM DO I CALL IF I HAVE QUESTIONS OR PROBLEMS?

If you have any questions regarding your rights as a participant in this research and/or concerns about the study, or if you feel under any pressure to enroll or to continue to participate in this study, you may contact the University of Missouri Campus Institutional Review Board (which is a group of people who review the research studies to protect participants’ rights) at (573) 882-9585 or umcresearchcirb@missouri.edu.

You may ask more questions about the study at any time. For questions about the study or a research-related injury, contact Carl Kinnison at 573-986-7369.

A copy of this Informed Consent form will be given to you before you participate in the research.

SIGNATURES

I have read this consent form and my questions have been answered. My signature below means that I do want to be in the study. I know that I can remove myself from the study at any time without any problems.

Subject

Date

Appendix B

Multiple Choice Test

HUMAN TRAFFICKING EXAM

1. Human trafficking involves the exploitation of persons for the following two reasons:
 - A. Commercial sex and forced labor
 - B. Human smuggling and prostitution
 - C. Immigrant transportation and debt servitude
 - D. Sweat shop operations and domestic servitude

2. What is one condition which has led to an increase in human trafficking over the past 20 years?
 - A. A significant upsurge in international poverty
 - B. An increased level of corruption at the United States' borders
 - C. The need for drug smugglers to expand their criminal enterprise
 - D. The ease of counterfeiting passports with the use of modern-day technology

3. Human trafficking is commonly referred to as:
 - A. Human smuggling
 - B. Indentured servitude
 - C. Modern day slavery
 - D. Peonage

4. What is the value of involving federal agencies in the investigation of human trafficking cases?
 - A. The international origins and aspects of the crime
 - B. The nature and complexity of human trafficking cases
 - C. The need for a major commitment of investigative resources
 - D. All of the above

5. Law enforcement agencies at which level are most likely to 'stumble' on to a human trafficking violation?
 - A. Federal
 - B. International
 - C. Local
 - D. State

6. What are the three methods specified in the Trafficking Victims Protection Act which traffickers use to control their victims?
 - A. Blackmail, threats, or money
 - B. Deportation, coercion, force
 - C. Force, fraud, or coercion
 - D. Harm, injury, or violence

7. Payment for the illegal transportation of someone across an international border is:
- A. Deportation
 - B. Importation
 - C. Smuggling
 - D. Trafficking
8. Often, those who lead or direct human trafficking schemes will have _____ status in the United States.
- A. Known criminal
 - B. Legal
 - C. No legal
 - D. Undocumented
9. The Trafficking Victims Protection Act is a/an _____ law that allows trafficking victims, even if they are in the United States illegally, to be formally identified as victims of crime instead of being viewed as violators of United States law.
- A. law enforcement-centered.
 - B. 1998
 - C. victim-centered
 - D. international
10. Human trafficking functions as a multinational crime that involves numerous _____, and _____, and _____ countries.
- A. recruiting / smuggling / usage
 - B. source / recruiting / syndicate
 - C. source / transport / destination
 - D. trafficking / smuggling / payment
11. Which of the following is NOT part of the Trafficking Victims Protection Act?
- A. Encouraging collaboration between global, federal, state and local law enforcement agencies.
 - B. Focusing responsibility for enforcing human trafficking laws upon local law enforcement agencies.
 - C. Increasing criminal penalties for convicted traffickers.
 - D. Using the Racketeer Influenced and Corrupt Organizations Act (RICO) provisions including sentencing enhancements, asset forfeitures, and allowing victims to seek punitive damages.
12. What type of visa is used to assist victims of human trafficking and allows the victims and their family members to stay in the United States to assist in an investigation or prosecution of human trafficking?
- A. K visa
 - B. T visa
 - C. X visa
 - D. Y visa

13. Which of the following is NOT a potential indicator for living and working conditions for human trafficking victims?
- A. A large number of people living in a very small space.
 - B. Frequent movement from location to location.
 - C. Living near are on work premises.
 - D. Unrestricted movement with easy access to public transportation.
14. During the course of a human trafficking investigation, collaboration between local, state, and federal law enforcement agencies is needed to:
- A. Build strong cases against traffickers.
 - B. Make investigative decisions.
 - C. Make prosecution decisions.
 - D. All of the above
15. _____ is typically a short-term “business relationship” that ends once a person illegally crosses a border.
- A. Kidnapping
 - B. Peonage
 - C. Smuggling
 - D. Trafficking
16. What is the statute of limitations for criminal acts against children specified by the Trafficking Victims Protection Act?
- A. Three years
 - B. Five years
 - C. Ten years
 - D. There is no statute of limitations for acts involving children
17. To be eligible for special immigration status in the United States, human trafficking victims must:
- A. Be willing to assist in the prosecution of their traffickers
 - B. Participate in drug rehabilitation services if they test positive for illicit drugs
 - C. Pay a small application fee to demonstrate their interest in staying in the United States
 - D. Work as an informant for the U S Attorney’s office to identify trafficking conspirators
18. What is the most common form of coercion used against victims in human trafficking cases?
- A. Agricultural servitude
 - B. Debt bondage
 - C. Imprisonment
 - D. Threats to kill family members
19. What is one way an investigator may effectively gauge a potential human trafficking victim’s level of freedom?
- A. Ask their employer
 - B. Check their criminal record
 - C. Obtain information about their social networks
 - D. Track down their close associates

20. Individuals who engage in human trafficking do so with a broad variety of motives. Some, such as pimps or panders, do so for _____, and their offenses constitute sex trafficking under the United States Trafficking Victims Protection Act.
- A. Commercial sexual purposes
 - B. Domestic servitude
 - C. Personal gratification
 - D. Sweatshop labor
21. Which of the following is one of the strongest signs of a possible human trafficking violation?
- A. A person in possession of multiple credit cards with different names
 - B. An individual in possession of a fake driver's license
 - C. Someone in poor physical and mental health seeking donations in a public area
 - D. Someone in possession of someone else's legal or travel documents
22. The vast majority of domestic servitude cases are perpetrated by individuals or couples who typically recruit domestic help from their native villages or countries, with _____ being favorite targets.
- A. Children
 - B. Entire families
 - C. Teenage girls and young women
 - D. Young, strong men
23. When a minor is trafficked for a commercial sex act, which of the following is true?
- A. It is not necessary to prove the trafficker used force, fraud, or coercion.
 - B. The minor will be treated as an adult victim by the U. S. Court system.
 - C. The minor must physically resist the sex act before there is a violation under the Trafficking Victims Protection Act.
 - D. There must be proof the trafficker knew the victim was in fact a minor.
24. As described in the Trafficking Victims Protection Act, a trafficker who holds someone's legal documents (for example, a passport), and threatens to report them to law enforcement authorities as an illegal immigrant if they refuse to follow their directive is using:
- A. Coercion
 - B. Force
 - C. Fraud
 - D. Oppression
25. The United States is primarily a _____ country for human trafficking.
- A. Destination
 - B. Recruiting
 - C. Smuggling
 - D. Source

Appendix C

RATTC Self-Directed Learning Scale and Permission

Likert Scale Opinion Survey

Please read each of the statements below and place an 'X' in the column to the left of the statement which best describes how strongly you disagree or agree with the statement.

STATEMENT	Strongly Disagree	Disagree	Neutral/ Undecided	Agree	Strongly Agree
I regularly learn things on my own outside of class					
I am very good at finding out answers on my own for things that the teacher does not explain in class					
If there is something I don't understand in a class, I always find a way to learn it on my own					
I am good at finding the right resources to help me do well in school					
I view self-directed learning based on my own initiative as very important for success in school and in my future career					
I set my own goals for what I will learn					
I like to be in charge of what I learn and when I learn it					
If there is something I need to learn, I find a way to do so right away					
I am better at learning things on my own than most students					
I am very motivated to learn on my own without having to rely on other people					

Kinnison, Carl A

From: JLounsbury@aol.com
Sent: Wednesday, March 16, 2016 2:52 PM
To: Kinnison, Carl A
Subject: Permission Granted

Hi Carl,
You have my permission to use that scale.
Best Wishes,
John
John W. Lounsbury, Ph.D.

Good day,

My name is Carl Kinnison and I am an instructor in the Department of Criminal Justice and Sociology at Southeast Missouri State University. I am currently working on my dissertation for my Doctorate degree at the University of Missouri at Columbia. **I am writing to respectfully request permission to use a sub-scale of your Transition to College Report.**

For my dissertation I am conducting a study on the effectiveness of online learning in a basic law enforcement academy. As part of this research, I would like to examine the relationship between self-directed learning and successful learning in both an online and traditional face-to-face classroom environment. Although I have not seen the specific test I am requesting to use, I discovered your 10 item sub-scale in a journal article entitled "Self-Direction in Learning and Personality: The Big Five and Narrow Personality Traits in Relation to Learner Self Direction." The article appeared in the *International Journal of Self Directed Learning*, Volume 2, Number 2, Fall 2010. The ten items are listed below.

Thank you in advance for your consideration of my request. If I can provide any additional information, please don't hesitate to contact me.

Carl Kinnison

Department of Criminal Justice and Sociology

Southeast Missouri State University

One University Plaza

Cape Girardeau, MO 63701

Appendix D
Demographic Survey Instrument

Name: _____

1. What is your age? _____

2. Please circle your gender. Male Female

3. If you have completed any college hours (community college or otherwise), please list the number of hours attained. _____

4. If you have completed a degree, please mark an 'X' next to the appropriate degree.
_____ Associates Degree
_____ Bachelor's Degree
_____ Master's Degree

5. Have you taken any previous online or blended (a combination of online and face-to-face) courses? Yes No

6. If yes, how many? _____

7. _____ On a scale of 1 to 10, please rate your level of comfort working with technology (e.g., working with computers, using computer applications such as Microsoft Word and Excel, working online, downloading and installing files, use of the internet, etc.), with 1 being not comfortable at all and 10 being extremely comfortable.

VITA

Carl Kinnison has been a life-long Missouri resident and is currently a full-time faculty member in the Department of Criminal Justice and Sociology at Southeast Missouri State University. He is also the Director of the Southeast Missouri State University Law Enforcement Training Academy. He obtained a Bachelor of Science in Criminal Justice from Southeast Missouri State University, and a Master of Science in the Administration of Justice from Southern Illinois University at Carbondale. Prior to accepting his current position, Carl worked 34 years for the Cape Girardeau, Missouri Police Department, retiring in 2012 after serving his last seven years as Chief of Police. Carl recently finished coursework for his Doctor of Education from the University of Missouri-Columbia.