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# Reflective thinking and emotional intelligence as predictive performance factors in problem-based learning situations

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COLLEGE OF EDUCATION

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ABSTRACT

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by

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M.Ed., University of Virginia, 2002
M.S., Lynn University, 1999
B.S., Colorado State University, 1986

Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy
Education

Walden University
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ABSTRACT

Continued improvement of the training and preparation of Federal Bureau of Investigation (FBI) special agents is critical to the organization's ability to protect the national security of the United States. Too little attention has been paid to the factors that improve new agent trainees' (NATs) ability to learn and succeed in their training programs. Based on the theories of reflective thinking and emotional intelligence, this nonexperimental, correlational study explored predictors of NATs' ($N$ = 183) performance in problem-based exercises as part of the 20-week training program. Self-report instruments measured levels of critical reflection (CR), emotional intelligence (EQ), and perceived ability (PA). An established performance measure collected instructor-observed performance (OP) scores. Regression analysis tested the relationships of CR and EQ with OP but yielded no statistical significance. Due to concerns about the measure of OP, a second analysis revealed significance with PA scores for EQ ($b$ = .193, $p$ = <.001) only. Preparing effective special agents to respond to the challenges of a volatile global environment is a priority of the FBI and contributes to positive social change, as its mission is to ensure the safety and security of the United States. The main conclusion from the study was that a better measure of performance is needed to study the impact of CR and EQ on trainees. When measured more effectively, characteristics of trainees may be relevant to improving performance.

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# DEDICATION

This work is dedicated to the New Agent Trainees of the Federal Bureau of Investigation (FBI) who are the future of a great organization. Never underestimate the value of what you do for the FBI, the United States, or the world, regardless of assignment. Being an FBI Special Agent is not just a job; it is a calling. Go forth and do your best for the good of the United States of America and the world.

ACKNOWLEDGMENTS

Like a marathon, the doctoral experience challenges an individual's will, character, perseverance, and commitment. My doctoral marathon had obstacles and challenges that tested me at every mile. However, the greatest lesson I learned was that I did not run this doctoral marathon alone. Although lonely and long at times, I realized many contributed, in their own ways, to ensure that I crossed the finish line. This dissertation is the product of the support, love, and commitment of many on my team who recognized my passion for learning, admired my perseverance, and believed in my abilities. I owe my accomplishment to those who refused to let me falter in spite of my self-doubt. Without their support, crossing the doctoral finish line would have been impossible. I cannot thank you enough.

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# CHAPTER 1: INTRODUCTION TO THE STUDY

During tumultuous times, law enforcement organizations like the Federal Bureau of Investigation (FBI) must function at their highest capacity to ensure the protection and safety of the American public and American interests around the world. Training Special Agents (SAs), who are responsible for protecting United States citizens, can be a daunting and challenging assignment. FBI Special Agents must operate in a hostile environment that threatens the United States' national security. Educating qualified candidates to become SAs is a multifaceted process combining cognitive and emotional learning. Many law-enforcement training and development educators do not understand the purpose of training or the types of learning required (Tannenbaum & Yukl, 1992); as a result, they fail to consider the importance of promoting both the cognitive and emotional aspects of learning for effective practice (Cherniss, Goleman, Emmerling, Cowan & Adler, 1998).

All FBI New Agent Trainees (NATs) prepare for a demanding and prominent job where they are expected to attain consistent results in unpredictable situations. The complexity of this training has evolved over the last 100 years. Globalization, technology, complex and violent criminal activity, and worldwide, high-profile investigations require the FBI to adopt a more sophisticated, effective approach to educating its agents. During the New Agents Training Program, trainees learn a wide variety of concepts, procedures, and practices in a short time span, while continuing to cope with social and personal commitments. These NATs may find themselves "in over their heads" trying to meet the mental demands of a new job and the challenges of

modern life (Kegan, 1994). Understanding the factors that may affect learning and subsequent performance is paramount to building effective training programs that transform trainees into SAs better prepared for the challenges ahead.

Trainees' ability to reflect critically and their emotional intelligence add other dimensions to their ability to perform. How suitable individuals with diverse educations and backgrounds transform into productive SAs depends on how they experience learning. Transformation involves fostering a deep level of learning that challenges individuals to reflect critically on assumptions, question predisposed perceptions, and make meaning of new knowledge (Kegan, 1994; Mezirow, 1991). Critical reflection prompts a closer inspection of one's beliefs and values after a new experience, resulting in changes in perceptions, assumptions, or behaviors. Emotions guide thoughts and behavior by prioritizing cognition and convey knowledge about one's relationships (Mayer & Salovey, 2004). Emotional intelligence gives a NAT the ability to cope with the demands of the environment (Bar-On, 2004; Goleman, 1995; Salovey & Mayer, 1990). As a result, NATs who demonstrate high levels of emotional intelligence may be better able to handle stresses and demands, thereby translating behavior into successful performance in the training environment.

Knowing the relationship of reflective thinking and emotional intelligence to individual performance is crucial to understanding how individuals are transformed. Faced with training a widely diverse trainee population, the FBI must understand fully the implications of reflective thinking and emotional intelligence to increase the potential for learning, and for preparing trainees to function as effective, productive FBI SAs. All

law enforcement organizations can benefit by understanding how these trainees process new knowledge, then apply their new learning combined with demonstrating their suitability for the job all while performing under conditions replicating real-life situations.

Most scholarship on reflective thinking presents qualitative studies to support theoretical models rather than empirical evidence (Kegan, 1980; King & Kitchener, 1994; Mezirow, 1991). Quantifying reflective thinking proves difficult due to its cognitive nature; few instruments have been developed to measure this construct (Kember et al., 2000; Peltier, Hay, & Drago, 2005; Wittenburg, 2000). Empirical studies on emotional intelligence are abundant; however, most research findings appear inconsistent due to the numerous definitions of emotional intelligence and instruments (Mayer, Salovey, & Caruso, 2008; Qualter, Gardner, & Whiteley, 2007).

This study explored the predictive ability of reflective thinking and emotional intelligence on individual performance in problem-based learning situations for FBI NATs. The results may have implications in designing learning events and in the development of all law enforcement educators. Further discussion of theoretical frameworks and supporting constructs of reflective thinking and emotional intelligence within a law enforcement-training environment is provided in Chapter 2.

## Background of the Study

The FBI is challenged continuously to train its agents to meet the demands of the times. Globally, it fights the war on crime and protects national security in many areas. The demanding assignments of today's FBI SAs require individuals who are trained to

tackle sophisticated, complex, and far-reaching criminal activity related to terrorism, financial fraud, espionage, cyber-intrusion, and top-ten fugitives. Traditionally, the FBI has structured its training to meet evolving needs and social demands. More so than in any other generation, the FBI must prepare SAs to react to ever-changing demands to protect the American public in a volatile global environment (FBI, 2009c). Over the years, the FBI increased the training in breadth, depth, and intensity to provide the NATs with knowledge and proficiency so they can "hit the ground running" (B. D. Lamkin, FBI Assistant Director, Training Division, personal communication, November 5, 2007).

In 2009, FBI Director Robert Mueller expressed why SAs must prepare for multiple challenges:

> The pace of change has been unprecedented. The FBI has adapted to globalization and new technologies. We have developed new capabilities to fight international criminal organizations, sophisticated cyber criminals, fraud that undermines the economy, foreign spies seeking to
> steal vital secrets and technologies, and terrorists working to commit mass murder. (FBI, 2009c, p. 3)

The first FBI New Agents Training classes were held at the Department of Justice in Washington, DC, beginning in 1929. The original New Agents Training Program lasted 8 weeks and focused primarily on basic criminal investigations, fingerprinting, physical training, and evidence collection (FBI, 2009c). In 1935, in response to the shooting deaths of two agents by Pretty Boy Floyd, Congress commissioned the FBI to carry firearms and granted them powers of arrest (FBI, 2009c). New Agents training expanded to 10 weeks in order to include firearms and arrest techniques that are still used today.

In May 1972, the FBI expanded its training capabilities with a modern training facility at the Marine Corp Base at Quantico, Virginia. The 385-acre FBI Academy campus includes two dormitory buildings, outdoor and enclosed firing ranges, a full-sized gym, a library, classroom buildings, a chapel, cafeteria, a 1,000-seat auditorium. To continue to meet the ever-changing requirements for New Agents Training, a small town, called Hogan's Alley, was replicated in 1987 to provide an interactive training environment where NATs could practice in real-life scenarios. The new facility gave the FBI the ability to provide training commensurate with social changes and demands to include increasingly violent, organized crimes. The curriculum expanded to 14 weeks to add practical exercises to the program (FBI, 2009c).

The most pronounced transformation in the New Agents Training Program came in the wake of the events of September 11, 2001, and subsequent terrorism incidents. After the attacks, the FBI engaged in an arduous organizational transformation to move from being, law enforcement-focused to intelligence-driven. The resulting changes included revising the FBI's vision, mission, strategic plan, administrative policies, and operational procedures. Counterterrorism and intelligence collection became prominent subject matter in the curriculum. The New Agents Training Program continues to morph to reflect these new requirements.

Educating NATs to the level necessary to make immediate contributions as proficient investigators is a tremendous challenge for the FBI. No longer does the new SA have the luxury of working simple cases to develop experience. Depending on their field office assignments, SAs can find themselves investigating complex cases almost

immediately. Therefore, the FBI must continually assess and adapt its NA training to prepare trainees for the complex investigations SAs are expected to conduct. To meet this challenge, FBI Academy faculty must consider whether the NATs have the capacity to learn what is necessary to do the job and then apply new knowledge and skills proficiently to be effective. The NATs' levels of reflective thinking and emotional intelligence can directly affect how they learn and perform during the demanding, now 20-week training program.

## Problem Statement

Little attention has been paid to the factors that improve the NATs ability to learn and succeed in the NA training program. This study explored the relationship of reflective thinking and emotional intelligence to individual learning in terms of law enforcement training to determine how to improve the training environment for FBI NATs leading to improved job performance. The emphasis on reflective thinking highlighted the importance in how individuals approach learning. How they approach and reflect on their understanding of new knowledge should affect their ability to succeed in practical exercises. Emotional intelligence may affect an individual's ability to engage in reflective thinking affecting their ability to apply new learning and their success in these exercises.

The study explored the extent to which the NATs engage in reflective thinking and apply emotional intelligence throughout their training affects their ability to perform successfully throughout the training program. An essential component to NA training is a learning environment conducive to reflective thinking and emotional intelligence that

allows the trainee to make meaning of the new information then transfer new knowledge into successful job performance. To prepare proficient FBI SAs requires an understanding of how the NATs combine reflective thinking, in particular critical reflection, and emotional intelligence to perform successfully in the training environment. It is crucial to understand the relationship between reflective thinking, emotional intelligence, and successful performance under stressful training conditions.

Additionally, the study adds to the limited empirical research examining reflective thinking and contributes to the growing literature supporting emotional intelligence. Reflective thinking and emotional intelligence each have demonstrated the potential to influence performance (Jaeger, 2003; Phan, 2008). The relationship between reflective thinking and emotional intelligence affects the NATs' ability to bring together the multiple aspects of investigative procedures, legal use of deadly force, arrest techniques, evidence collection, intelligence collection, and tactical procedures, learned throughout the training program and apply new knowledge effectively. Faculty must understand the relationship between reflective thinking, emotional intelligence, and successful performance under stressful training conditions. Examining the predictive value of reflective thinking and emotional intelligence on academic success in problem-based learning will help improve the FBI's approach to educating its SAs.

The relationship between reflective thinking and emotional intelligence primarily has been overlooked in educational and organizational research. Scholarship examining the relationship of either reflective thinking or emotional intelligence to performance is extensive. However, research tying both constructs to performance is non-existent. Very

little research evaluating either of these constructs exists in relation to a law enforcement-training environment. The role of emotions and feelings as part of critical reflection has not been adequately explored. Empirical studies of reflective thinking are limited. This empirical study sought to determine a correlation between emotional intelligence and critical reflection and their affect on performance. Therefore, this study contributed to understanding the relationship of transformational learning and emotional intelligence on performance.

## Purpose of the Study

The purpose of this quantitative study was to examine whether reflective thinking and emotional intelligence are predictive of performance. Specifically, this study attempted to identify how reflective thinking and emotional intelligence correlate with the NATs performance in problem-based learning events. Determining if these two constructs are related to individual learning and performance can improve instructors' and learners' understanding of the individual learning process leading to more effective teaching strategies to maximize results. This exploration will enrich the knowledge base of FBI Academy faculty.

## Nature of the Study

This nonexperimental, correlational research plan examined the predictive relationships among reflective thinking, emotional intelligence, and the performance of the NATs in practical exercises. An empirical research design addressed a lack of existing quantitative research in reflective thinking and added to a growing body of research in emotional intelligence. Data was collected through self-report instruments

that measured reflective thinking, emotional intelligence, and perceived ability. Instructor assessments provided data rating trainee performance along 10 dimensions in 13 practical scenarios.

This study measured the relationships of reflective thinking and emotional intelligence on the performance of FBI NATs in a professional law enforcement-training environment. Research in either concept is lacking in a law enforcement-learning context. Existing educational and organizational research indicates a strong relationship between performance and both constructs of emotional intelligence and reflective thinking.

## Research Questions and Hypotheses

This study examined the following research question: What is the predictive relationship of reflective thinking and emotional intelligence to FBI NATs' performance in the problem-based learning exercises?

This study tested the following null hypotheses:

$H_0$: Reflective thinking (specifically critical reflection) and emotional intelligence will have no predictive relationships to performance of NATs in the problem-based learning exercises of the Practical Applications Unit (PAU).

$H_1$: Reflective thinking (specifically critical reflection) and emotional intelligence will have predictive relationships to performance of NATs in the problem-based learning exercises of the PAU. In all cases, for this hypothesis, the correlations are expected to be positive.

*Study Population and Sampling*

The population at the focus of this study was the NATs. The sample was drawn from NATs assigned to a New Agents Training class at the FBI Academy, Quantico, Virginia, during calendar Year 2009. The research design required a convenience sample of approximately 170 participants. Based upon statistical calculations, a sample size of 170 participants achieved a desired statistical power in addition to allowing data collection to be completed within a reasonable period.

*Data Collection*

Three self-report instruments were used in this study. First, the Questionnaire for Reflective Thinking (Kember et al., 2000) measured the NAT's capacity for reflective thinking based on Mezirow's (1991) dimensions for transformational learning. Second, the Emotional Quotient Inventory 125 (Bar-On, 2004) measured the trainee's level of emotional intelligence. Third, the NATs completed a 360$^{o}$ Perceived Ability Questionnaire, created specifically for this study by the researcher, where NATs rated their own performance in the same 10 dimensions as rated by their Practical Applications instructors.

*Data Analysis*

This study examined the correlation coefficients between the independent variables, reflective thinking and emotional intelligence, and the dependent variable, NAT performance. All variables were treated as continuous, interval level variables. Multiple-regression analysis was the primary data analysis strategy for this study used to examine the aggregate variance across the 13 separate scenarios within the Practical

Applications curriculum. Multiple-regression analysis examined the relationship between emotional intelligence, and the practical application assessment scores.

## Theoretical Base of the Study

The performance of NATs may be affected by the way they process and reflect on new learning and the way they respond to the demands of the training environment according to their emotional intelligence. As such, the theoretical frameworks that grounded this study are transformational learning (Mezirow, 1991) and emotional intelligence (Bar-On, 2000; Salovey & Mayer, 1990). One component of transformational learning is reflective thinking, which has been long argued to support individual approaches to learning and behavior (Dewey, 1933; Kegan, 1994; Mezirow, 1991). Emotional intelligence may influence an individual's ability to engage in reflective thinking which in turn may affect the ability to apply new learning (Bar-On, 2000; Goleman, 1997; Salovey & Mayer, 1990). Since the literature suggests a direct relationship between the cognitive and affective domains of learning, it stands to reason that both constructs be considered when evaluating their potential in affecting NAT performance.

Reflective thinking increases knowledge through a deep-level change in an individual’s perspective and understanding (Kegan, 1994; Mezirow, 1991, 2000). Reflectivity emphasizes a fundamental connection between the learner and the environment, thus leading to meaning-making. Reflection is both an individual and social process that considers experience and analysis and then results in action and change

(Dewey, 1933). Defined as an "*active, persistent, and careful consideration of any belief or supposed form of knowledge in the light if the grounds that support it and the further conclusions to which it tends*" (emphasis in original, p. 9), Dewey contended that an individual makes sense of the world around them through reflective thought.

An individual's way of making meaning influences the learning process through one's epistemological beliefs (Kegan, 1994; King & Kitchener, 1994; Mezirow, 1991). Kegan (2000, p. 52) explained this influence as "not *what* we know but *how* we know" (original emphasis). Depending upon individuals' epistemic belief, they may not have the capacity to solve problems to cause positive change to deeply held assumptions (Baxter Magolda, 1992; Lucas & Tan, 2007).

In terms of becoming an FBI SA, transformation is a necessary outcome of the learning process for the NAT. NATs have differing work, life, and educational experiences and very few have law enforcement experience. Most come from professional and educational backgrounds unrelated to the job responsibilities for which they train during the 20-week academy program. The FBI must foster their transformation into SAs capable of protecting national and global security during turbulent and complex times (FBI, 2009c). During their 20-week training academy, individual trainees construct meaning and reframe perspectives based upon new learning (Mezirow, 1978, 2000). The more the individual NAT believes that knowledge is generated rather than acquired, the more likely the trainee will engage learning processes that help make meaning of the new experience and thus lead to changed meaning

perspectives (Kegan, 1994). The NAT will have a new frame of reference based upon their new experiences.

For the NAT, transformation is the result of learning through their individual experiences in the NA Training Program. Individual learning results from life experiences (Mezirow, 1981) or the result of individual beliefs about both knowledge and knowing that occur through maturation (King, Kitchener, & DeLuca, 2006). Individuals exposed to new information resulting from new experiences engage in a dynamic process of making sense from their personal perspectives (Mezirow, 1991). Mezirow argued that for transformation to occur, knowledge gained through a new experience needs to reconstruct an existing frame of reference to produce new meaning perspectives. Transformational learning occurs when meaning perspectives are changed due to conflict between closely held assumptions and new knowledge. Mezirow (1991) categorized four forms of reflective thinking that contribute to individual and organizational learning: habitual action, thoughtful action, reflection, and critical reflection. An individual challenges, assesses, and validates meaning perspectives through critical reflection (p. 44). For NATs, creating new meaning perspectives through critical reflection is necessary to foster transformation into their new role as SAs.

Reflection promotes the development of emotional intelligence and cognitive growth. In terms of preparing New Agent Trainees for the demands of an FBI SA, understanding how these constructs affect the trainees' performance is critical. The overarching goal of the New Agents Training Program is to transform qualified individuals into highly proficient SAs prepared to respond in a rapidly changing,

unpredictable work environment. Current research is extensive in how reflective thinking and emotional intelligence relate to academic performance. This study explored cognitive and constructive development learning theories to promote understanding of the effect of experiential learning on individual learning. Because few faculty members engage learning opportunities to support reflective thinking and emotional intelligence, the results of this study can provide direction in developing effective learning opportunities to prepare New Agents as FBI SAs.

Understanding if reflective thinking and emotional intelligence can predict performance may provide insight into developing effective organizational learning programs (Cherniss, 2001; Rozell, Pettijohn, & Parker, 2002; Vera & Crossan, 2005). Most research in reflective thinking has occurred within an academic setting focusing on adults in a higher-educational learning environment. Reflection has been associated with organizational learning as well. Reflection is a complex concept that exceeds individual introspection as a catalyst for organizational learning (Hoyrup, 2004). Schon (1987) introduced the concept of reflection-in-action to prepare professional for the demands of practice, emphasizing the influence of reflection in the workplace. As part of individual learning, reflection has the capacity to bridge social and organizational learning (Elkjaer, 2003). Reflection establishes the relationship between actions and their consequences that result in learning. In an organizational context, individuals and organizations are melded together in a continuous learning process where thinking is a way to define problems and reflection is a way to share learning outcomes (Elkjaer).

Learning requires reflection. Reflection guided by emotion leads to a greater opportunity for broadening one's depth of knowledge and awareness as it exceeds the cognitive realm (Lucas & Tan, 2007; Rodgers, 2002). Also, reflection and thinking do not occur in isolation of feelings (Dewey, 1933, 1944). Dewey contended that attitudes and emotions are intricately tied to reflection and learning and cannot be separated. Dewey (1933) stated:

> There is no integration of character and mind unless there is a fusion of the intellectual and the emotional, of meaning and value, of fact and imaginative running beyond fact into the realm of desired possibilities (p. 278).

Hence, for a complete picture of individual learning, researchers must consider emotions and reflection jointly when assessing the nature of learning and the value each construct brings to the adult learning environment. Law enforcement educators cannot fully understand the effect of reflection without including the affective domains of learning because learning is a matter of how individuals think *and* how they feel.

Related to the multiple intelligences concepts of intrapersonal and interpersonal intelligences (Gardner, 2004) is emotional intelligence, a form of intelligence that influences learning and performance (Bar-On, 2000; Goleman, 1997). After emotional intelligence was popularized by Goleman (1995), researchers then categorized emotional intelligence in two separate models: mental ability (Mayer, Caruso, & Salovey, 2000a) and mixed model (Bar-On, 2000; Goleman, 1995) to further characterize its application. Debates continue regarding the validity of emotional intelligence as an individual intelligence (Mayer, Salovey, & Caruso, & Sitarenios, 2001; Roberts, Zeidner, & Matthews, 2001) due to inconsistent research findings blamed on the multitude of

definitions and measures used for emotional intelligence (Mayer, Caruso, & Salovey, 2008).

Emotional intelligence may hold value in predicting success in academics, job performance, and life achievements (O'Connor & Little, 2003). Empathy, problem solving, optimism, and self-awareness are among the skills that indicate a level of emotional competence that gives individuals the ability to reflect, understand, and react to their environment (Romannelli, Cain, & Smith, 2006). Since most of the NATs are embarking on second careers, they must acquire a new professional identity as an FBI SA. Emotional intelligence supports the development of a professional identity (Akerjordet & Severinsson, 2007). To reinforce the transformation, NATs are assessed on their ability to manage themselves and work effectively with others along six suitability dimensions that reflect the personal and social competencies of emotional intelligence needed for successful job performance (Goleman, 2001): conscientiousness, cooperativeness, emotional maturity, initiative, integrity, and judgment (FBI, 2009b).

## Definition of Terms

1. *Ability*: a "characteristic that an individual can obtain a desired outcome on a task of defined difficulty" (Mayer et al., 2000, p.105).
2. *Cognition*: the "processes that mediate intellectual and emotional behavior" (Averill, 2001, p. 278).
3. *Critical reflection*: process that induces significant change of "one's perspective through a deeper level of reflection creating an awareness of why one perceives, thinks, feels, or acts" (Kember et al., 2000, p.385).

4. *Emotional intelligence*: *"*non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands" (Bar-On, 2004, p. 14).
5. *Epistemological beliefs:* individual beliefs about the character of knowledge, how one knows and comes to know (Schommer-Aikins, 2002).
6. *Habitual action*: learning instilled through frequent application with little conscious thought that does not involve reflection (Kember et al., 2000, p. 383).
7. *Learning*: the process by which permanent changes in behavior result from experience (Maier, Prange, & von Rosenstiel, 2001)
8. *New Agent Trainee*: individuals hired after a competitive selection process to attend a 20-week training program to become an FBI SA.
9. *New Agents Training Program*: A 20-week training program for FBI NATs providing a variety of topics to include but not limited to legal issues, intelligence collection, firearms, defensive tactics, investigative methods, ethics, tactical techniques, and interview and interrogation.
10. *Performance:* the level at which a person has learned to execute a particular skill or activity or an accomplishment. (Salovey, Brackett, & Mayer, 2004).
11. *Problem-based learning*: a learning environment that promotes reflective thinking by investigating real-life, ill-structured, and complex problems that prompt learners to reflect on their own learning (Koszalka, Song, & Grabowski, 2002a, p. 2).

12. *Practical Applications:* 72 hours of the FBI New Agent Training curriculum consisting of 13 problem-based learning scenarios in which NATs engage in real-life law enforcement situations designed to apply new skills and learning.
13. *Reflection:* the process of internally examining and exploring an issue of concern, triggered by an experience, which creates and clarifies meaning in terms of self, and which results in a changed conceptual perspective (Kember et al., 2000, p. 385).
14. *Reflective thinking*: "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the conclusion to which it tends" (Dewey, 1933, p. 9).
15. *Special Agent*: a law enforcement official of the Federal Bureau of Investigation "charged with the duty of collecting evidence in cases in which the United States is or may be a party in interest, and performing other duties imposed by law" (as stated on the official FBI SA credentials).
16. *Success*: "the degree of agreement between instructor and student ratings" (Falchikov & Boud, 1989, p. 425).
17. *Suitability dimensions*: Six categories defining behaviors for an FBI SA used to assess the suitability of NATs as they engage in the New Agents Training Program.
18. *Transformational learning*: process by which "frames of reference or mind-sets are transformed to generate beliefs or opinions that will prove more true or justified to guide action" (Mezirow, 1991, p. 8).

19. *Understanding*: "use of existing knowledge without appraisal that does not influence new learning, pre-existing meaning schemes, or perspectives, increasing the quantity of knowledge without change in behavior" (Kember et al., 2000, p. 384).

## Assumptions

An assumption made for this study was that the FBI New Agents Training Program is a form of professional learning rather than traditional academic education. The goal of the New Agents Training Program is to prepare NATs for future job performance in a practical application setting. This distinction may be critical in the interpretation of the results of this study when making comparisons to academic performance as reported in the literature. Due to this difference, some findings in this study may not be consistent with the literature when discussing academic performance issues.

Another assumption was that participants were candid in their responses to the self-report questionnaires. To increase the likelihood that individuals will respond truthfully on self-report instruments, they need to know that what they report will be anonymous (Popham, 1993).. Anonymity in this environment is especially important because NATs are sensitive to how they are perceived by faculty and peers, and how they are perceived can influence their performance results. For these reasons, providing anonymity to study participants may help to increase the participant response rate.

Because of the structure of the Practical Applications assessment process, the assumption for this study was that the Practical Applications instructors rated the

performance for each NAT according to *observed* negative behaviors during the practical exercise. Otherwise, the assumption was that the instructor rated the NATs performance as meeting expectations based upon their given assignment in the exercise and not necessarily their actual performance. For example, if a trainee was assigned to watch the rear of a building during an arrest situation the trainee would not be in a position of direct observation as the focus would be on the trainees entering the front of the building unless events unfolded that caused the trainee in the rear to react. If the trainee was forced to act and was observed by the instructor, the trainee would be rated on actual performance. However, because attention was not drawn to the rear trainee's behavior, the assumption is that the rear trainee's performance met expectations and therefore rated as such.

## Delimitations

Only FBI NATs who are assigned to a New Agents Training class beginning in calendar 2009 were considered for this study. The sample population was limited to NATs originally assigned to specific classes during the time data was collected. Trainees completed all 13 practical application exercises while assigned to the same primary Practical Applications instructor. Data collected from NATs who were "recycled" into another New Agent Training class from their original New Agents Training cohort were not included in this study in order to ensure consistent ratings of trainees among instructors.

## Limitations

A key limitation of this study was the potentially low response rate in each New Agent Training class. Because the NATs' participation was voluntary, a number of

trainees chose not participate. Further, NATs who may originally consent to participate in this study may not have completed the surveys for a variety of reasons. The overall percentage of respondents may be considerably lower than the overall number of NATs approached to participate in this study.

Another position taken in this study concerned the potential for low participation by the NATs. Mandating disclosure of this study being a part of a dissertation may generate immediate bias towards participation. Both the Walden University and FBI Institutional Review Boards (IRB) mandated disclosure of this dissertation study on the informed consent form and in the presentation to NAT classes. This disclosure may have served to dissuade participation. The NATs may have perceived their participation as part of a personal acquisition of the researcher, not realizing the full organizational benefits of their contributions. When these NATs prioritized their activities due to demands placed upon them during training, this study may not have been considered as a priority, thereby, being placed aside for what they consider activities that were more important reducing the likelihood of participation.

Related to this limitation was the possibility that those who do volunteer to participate with the study may possess higher levels of reflective thinking and emotional intelligence. A description of the study was provided to the NATs in the informed consent. This disclosure may have encouraged those who possess these characteristics to participate, possibly affecting the overall results. Scrutiny of the response distribution did not identify any potential response biases.

Another limitation, identified early in the formulation of the study design, was the potential lack of variance in the student ratings in the instructor's assessment of their performance. The design of the Practical Application student assessment allowed the instructor to make positive assumptions of student performance unless the trainee was observed performing unsatisfactorily. Unless a NAT visibly performed poorly in a given situation, the instructor rated the trainee as meeting expectations. Variance in practical application performance scores was expected to be limited. To address this potential limitation, the study used a 360° Perceived Ability Questionnaire to collect trainee responses on their own ability in the Practical Application exercises. The responses to the 360° Perceived Ability Questionnaire provided additional variance in describing trainee performance.

Generalizability of the study results was limited due to the nature of the study population. The profile of a FBI SA candidate was of an older, more educated individual with diverse professional experiences as compared to younger, less educated, less experienced police candidates in other law enforcement agencies (FBI, 2009c). The qualifications for an FBI SA limited the applicability of the study results to police trainees in other law enforcement academies. Even so, the results of this study offered some insight in how to approach the design of law enforcement training to maximize student performance.

Comparisons among New Agents performance in the practical applications exercises were made with higher-education academic performance to interpret the study

results. It should be noted that the results were not consistent with the literature addressing academic performance due to the application of knowledge in field trials in the Practical Applications exercises, which are not normally included in a higher-education academic program. Due to differences in learning environments and missions, academic programs do not prepare individuals for specific job performance as does the FBI New Agent Training program. Therefore, study results were more relevant to organizational learning than to higher-education academic programs.

## Significance of the Study

This study held significance in several areas. The value of this study to social change lies in its contribution to the production of a proficient SA effectively responding to the demands of the job. It contributed to improving the training and education practices not only for the FBI, but also for other law enforcement agencies charged with producing proficient law enforcement officers. The results of the study will develop to the FBI's ability to train FBI SAs effectively and thus improving their ability to protect the national security of United States citizens around the world.

This study also contributed to the limited empirical research on transformational learning and reflective thinking. Literature supporting these constructs reports qualitative research findings not easily generalized to larger populations. This quantitative study of these qualitative constructs allowed for greater generalizability of the findings of this study of the FBI population to a wider law enforcement population.

The study built on a limited body of empirical research of Mezirow's (1991) transformational learning theory and reflective thinking. It contributed to a growing body

of research on emotional intelligence theory (Bar-On, 2000; Mayer & Salovey, 2004). This study contributed to the growing literature of both reflective thinking and emotional intelligence in education and training, specifically in the field of law enforcement. there is little empirical research on reflective thinking, particularly studies on reflective thinking and organizational learning. Although emotional intelligence research in various organizational settings is prevalent, only one study was identified that explores emotional intelligence and law enforcement (Bar-On et al., 2000). Emotional intelligence has not been studied sufficiently in a law enforcement-training environment.

The results of this study support a foundation for faculty education and development. As most law enforcement instructors are neither experienced nor trained to teach effectively, many rely on simplistic methods to communicate information. These instructors must recognize the importance of creating an effective learning environment that support these constructs to enhance the students' learning to increase their ability to transfer learning to successful job performance. Faculty can better understand how to create reflective learning environments in the classroom to enhance learning outcomes for organizational learners.

Studying how FBI NATs process and apply learning is important in terms of social change and improving the educational processes used in training NATs. The conclusion of this study included a discussion of faculty development considerations; since the existing research indicated that faculty could have some affect on learning and performance through instruction, student evaluation, or influence of the learning environment (Phan, 2007b). All law enforcement and intelligence agency educators and

trainers will benefit from understanding the relationship among critical reflection, emotional intelligence, and trainee performance in a problem-based learning environment. By understanding the role of these constructs, FBI Academy faculty will have better perspective on how learning for the FBI NAT can better translate to more effective on-the-job performance for the FBI SA.

Due to the protective nature of organization and the sensitivity of the work involved, little research exists on the NATs population. The few existing studies were doctoral studies conducted by then-active FBI employees (Gardner, 2004; McChesney, 1986). Even as a high-ranking member of the FBI Academy staff, I met with some resistance and scrutiny from other FBI members when conducting this study. Studying a rarely examined population, in terms of how they learn and what affects their learning, offered enormous opportunities to mold their future performance.

## Summary and Transition

FBI Academy faculty is confronted with the challenge of training diverse individuals to become FBI SAs. Reflective thinking and emotional intelligence must be an integral part of the individual learning process as well as part of the training program. If NATs are to transfer their new knowledge to successful performance in the learning environment, they must have the capacity to reflect critically on the learning and their experiences. Emotional intelligence gives the individual the ability to engage in real-life situations. This study attempted to determine the  how reflective thinking and emotional intelligence affect individual learning and performance.

This chapter described how this study explored the relationship of reflective thinking and emotional intelligence to individual learning to improve the training environment for FBI NATs leading to improved job performance. Using three self-report instruments and scores from an instructor observed-performance measure, this correlational study examined the relationship between reflective thinking and emotional intelligence and performance of NATs in problem-based learning exercises. The chapter concluded with a discussion of the significance of the study to the training of FBI NATs, the development of faculty teaching NATs, and the contributions of an empirical study of qualitative constructs.

Chapter 2 presents the theoretical foundations supporting transformational learning, reflective thinking, and emotional intelligence through a comprehensive literature review. The chapter discusses the historical learning theories of cognition, transformation, and reflection. Fundamental intelligence-based theories complete the review of scholarly literature. Current research was examined to help the reader understand the relationship between reflective thinking and emotional intelligence and performance. The chapter concludes with a discussion of the measures of reflective thinking and emotional intelligence as measured by the QRT (Kember et al., 2000) and the EQ-i 125 (Bar-On, 2004).

Chapter 3 presents the research study's proposed methodology, instruments, data collection, and data analysis. A summary of the pilot study conducted completes the discussion of the study's research design for this dissertation.

# CHAPTER 2: LITERATURE REVIEW

## Introduction

The purpose of this study was to determine if relationships exist between reflective thinking and emotional intelligence and the performance of FBI NATs in problem-based learning exercises. Reflective thinking and emotional intelligence are an essential part of the individual learning process and must be integrated into a comprehensive training program. To help transfer new knowledge that is required perform successfully in the learning environment, NATs must reflect critically to make sense of new learning and experiences (Mezirow, 1991). Emotional intelligence enhances the NATs' noncognitive capabilities, competencies, and skills that affect their ability to cope with environmental demands (Bar-On, 2004).

This chapter contains a literature review whose articles were obtained through a comprehensive search of databases in the fields of education, management, psychology, and law enforcement: Academic Search Premiere, Business Source Premiere, Educational Information Resource Center (ERIC), Education Research Complete, ProQuest Central, PsycARTICLES, and Management and Organization Studies. Diverse but relevant terminology was queried to obtain the most relevant and current literature and research for inclusion in this review. Search terms included: *adult learning, critical reflection, cognitive development, constructivist development, epistemology, experiential learning, emotional intelligence, Federal Bureau of Investigation, law enforcement training, organizational learning, performance, problem-based learning, reflection, reflective thinking, self-assessment, transformational learning.*

The literature review concentrated on the correlation between reflective thinking and emotional intelligence on individual performance and learning. The review examined the relationship between these two aspects of learning that are rarely acknowledged in academic or industrial research, cognitive and emotional learning (Cherniss et al., 1998). The first section addressed the learning environment of the FBI Academy and the FBI New Agents Training Program and made comparisons to similar law enforcement training environments to provide a context for learning and training in law enforcement.

The second section addressed the works of noted theorists and scholars in education, psychology, and management to include Dewey, Kegan, and Piaget. The scholarship on foundational learning theories includes cognitive development, constructive development, and transformation with a discussion of the relationship of these constructs in a law enforcement-learning context. Literature gaps in reflective thinking, emotional intelligence, and performance were offered. The evolution of the emotional intelligence theories is presented to include a discussion of: general intelligence, multiple intelligences, and current emotional intelligence theories. This review also discusses the instruments and methodologies used to measure reflective thinking (Kember et al., 2000) and emotional intelligence (Bar-On, 2004; Goleman, 1995; Salovey & Mayer, 1990). The chapter concludes with a review of literature addressing research findings supporting the use of self-assessments when predicting performance.

## Law Enforcement Academy Training

Law enforcement training programs are not similar in structure to traditional higher-education programs. In some respects, law enforcement training is arguably a form of vocational training teaching specific skills and knowledge related to a job function. But such a simplistic definition minimizes some of the critical life-and-death responsibilities for law enforcement officers. Public service occupations requiring specific training and education utilize training programs that exceed traditional vocational programs. Hence, the burden of effective training is even greater.

FBI NATs are diverse in work, life, and educational experiences. All trainees are college graduates of various degrees. Few NATs have law enforcement training or experience in an enforcement capacity. Based upon the constructs of transformational learning (Mezirow, 1991) and my experience as a law enforcement educator, NATs tend to construct meaning and reframe their perspectives based upon the new learning acquired through the training program. If a NAT's personal epistemology centers on knowledge generation rather than acquisition, the more likely the NAT will engage learning processes to help make meaning of the new experience, leading to changed meaning perspectives (Baxter Magolda, 1992; Mezirow, 1991; Kegan, 1994).

In a problem-based learning environment, the learners connect reflective thinking and practice in real-life situations not replicated in traditional classroom settings. For law enforcement, problem-based learning creates a holistic learning experience combining many of the desired characteristics for law enforcement to include critical thinking, problem solving, and team building (Mahardale, Neville, Jais, & Chan, 2008). Problem-

based learning approaches provide active learning experiences that arouse cognitive and emotional networks allowing the individual to understand the context of integrated disciplines. Meaning making and retention are intensified when individuals can see the big picture (Wolfe, 2006). As most NATs are unfamiliar with the role of a SA prior employment, they have little frame of reference outside of popular films, television, and books (Koletar, 2006). Therefore, these individuals will make meaning through concrete learning experiences when no previous experiential knowledge exists from which to draw (Dewey, 1933; Mezirow, 1991; Wolfe, 2006).

In a study of the curricula of 22 U. S. police academies, Bradford and Pynes (1999) found that less than 3% of the total academy training time was dedicated to decision-making, and problem solving curriculum. Law enforcement training is often structured to fit into a condensed period limiting the opportunities for reflective learning. Most training time is devoted to task-oriented areas associated with traditional police responsibilities such as firearms, arrest and control tactics, defensive driving. Concentration on officer safety, firearms, and defensive tactics remain critical to the preparation of all law enforcement officers forcing training academies to restructure their curricula to balance the need for safety over problem solving and communications (Chappell, 2008). The disadvantages of problem-based learning in a law enforcement-training environment include time consumption, changing roles of the learner and the instructor in the process, creation of sufficient problems, and a valid learning assessment process (Mahardale et al., 2008).

*FBI New Agents Training Program*

The FBI trains approximately 1,000 NATs, annually, through an intensive 20-week curriculum covering a wide range of skills-based and academic-based topics (FBI, 2009c). Classes of 50 NATs report for training approximately every 2 weeks during the fiscal year (from October 1 through September 30). NATs must exhibit excellent physical conditioning and academic excellence to prepare for the demands of the SA position.

Packed within 920 hours of academic, proficiency and tactical skills, and web-based training are a number integrated topic areas designed to establish an entry-level performance base for SAs in all operational areas. Integrated topics include but are not limited to investigative techniques, legal procedures, interview and interrogation, intelligence collection, source development, firearms, arrest techniques, evidence collection, ethics, behavioral analysis, and tactical procedures. Predominantly, the FBI Academy faculty delivers these topics to the NATs in a traditional face-to-face classroom environment (FBI, 2007). Because the FBI focuses on training its own agents, it has the ability to expand the New Agents Training Program as necessary to provide the most current topics relevant to the Bureau's mission. The training curriculum dedicates approximately 300 hours (one-third of the training hours) to defensive tactics, arrest techniques, firearms proficiency, and tactical driving. Problem solving, communications, and investigative practices make up a majority of the hours dedicated to New Agents training.

NATs also complete homework assignments, practice exercises, and attend assorted presentations on contemporary topics during the evening and weekend hours,

while maintaining a regimented fitness routine. The average NAT has little free time to reflect on or think about new learning. Reflection would provide the trainee with an opportunity to give new information greater consideration. Through reflection, the trainee can make sense of the new learning in order to apply it in a real world context (Dewey, 1933; Mezirow, 1991).

In late 2007, the New Agents Training curriculum underwent a comprehensive re-design to integrate the multidimensional concepts and procedures of the investigative and intelligence-collection processes into all facets of training, configured in a complex design (Figure 3). The NAT must grasp numerous hours of information then apply the new knowledge within the boundaries of established suitability dimensions, in interactive, practical situations that replicate real life events. The demands can be overwhelming, especially for those NATs lacking the capacity to reflect on new learning to make meaning of what they need to know and apply the knowledge to effectively perform (Kegan, 1994). NATs without high emotional intelligence may find it difficult to function in the high-stress and demanding learning environment (Bar-On, 2006; Goleman, 1995).

Reflection allows a student to make a critical assessment of their own learning leading to the development of specific skills and professional expertise (Phan, 2007a). If NATs do not have the opportunity to reflect on new learning, their ability to develop skills to improve their performance levels may be limited. This lack of reflective practice may translate to an inability to transfer knowledge to satisfactory job performance.

Moreover, unlike many occupations, the inability to make this connection may have very real, life-or-death consequences.

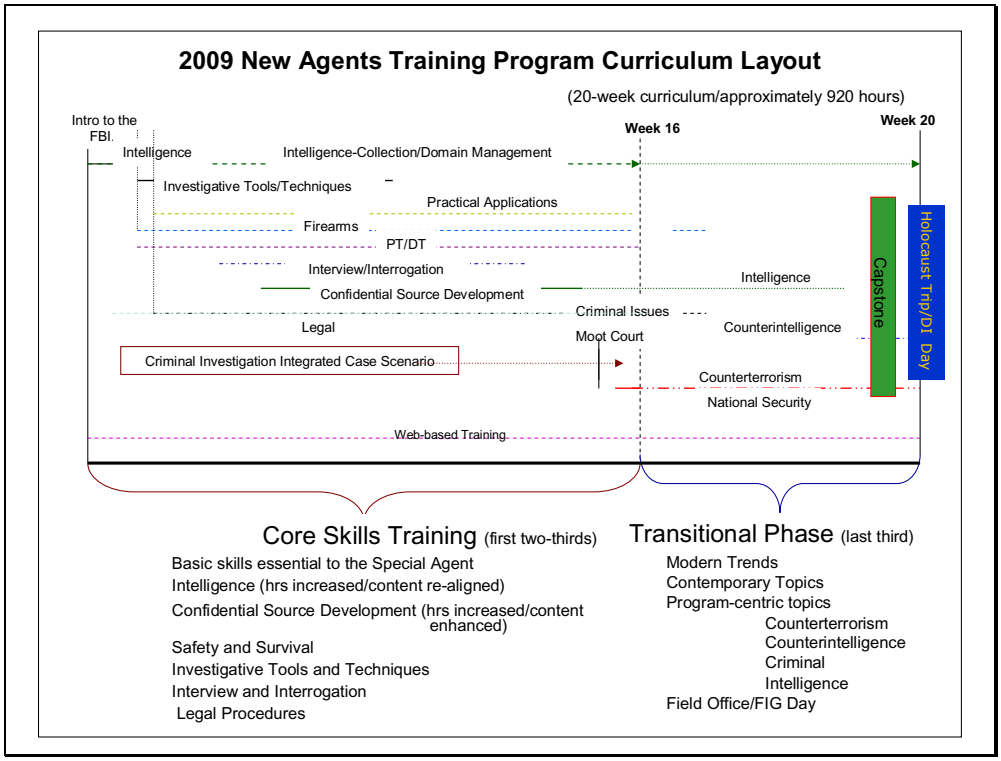


*Figure 1*. Layout of 20-week New Agents Training Program. (FBI, 2009a)

Although proficiency skills training such as firearms, defensive tactics, and arrest techniques figure prominently in the structure of the NATP, the primary focus of the program is knowledge development in cognitive-based topics that include legal issues, investigative methods, interview and interrogation, and intelligence collection (FBI, 2007). These topics are delivered in a traditional classroom setting, supported by activities and practical exercises. Embedded into all aspects of the New Agents program, the FBI organizational culture fosters the transformation of these individuals into FBI SAs trained to carry forth the FBI mission (Koletar, 2006).

Individuals selected for the FBI New Agents Training Program successfully accomplished a highly competitive application process. Candidates from diverse backgrounds and qualifications complete intelligence and psychological profiles, a panel interview and writing exercise, a comprehensive background investigation, and physical fitness test. In 2008, the FBI processed over 43,000 applicants for the SA position, hiring 843 NATs (FBI, 2009c). NATs include professionals from a wide variety of occupations who choose to leave successful jobs to serve as FBI SAs (Koletar, 2006). The FBI Academy faculty must transform these individuals into capable SAs prepared to handle a variety of challenging and high profile investigations.

The majority of individuals who enter the New Agents Training Program have little or no law enforcement or military experience (FBI, 2009c). In fact, for many trainees, the FBI is a second career unrelated to their primary education or prior work experiences. Preparing adults to perform in an unfamiliar, yet potentially dangerous, environment requires an academic approach that promotes transformational learning on a number of levels. Additionally, because NATs must exhibit behaviors within six prescribed suitability dimensions (FBI, 2009; Koletar, 2006); high levels of emotional intelligence may affect the Agent's successful performance.

Somewhat contrary to the notion of reflective thinking (Mezirow, 1991), the FBI immerses the NAT in a learning environment of inculcation rather than emancipation. Instead of questioning the organizational status quo to evoke new thinking apart from the norm (Freire, 1970; Mezirow, 1991), the objective for the NAT is to question existing personal assumptions to understand their new experiences then make sense of their new

role and responsibilities in line with organizational requirements. Regardless, NATs begin to evolve through a transformational process using new knowledge and learning acquired through their experiences in the New Agent Training Program.

*Practical Applications Exercises*

SAs must be able to synthesize and then react to a multitude of factors and information in any given situation. The public expects them to make accurate decisions according to prescribed laws, policies, and procedures or risk possible legal or professional ramifications. Dewey (1933) espoused that learning results from interaction between the student and the environment. Exemplifying Dewey's position, the Practical Applications curriculum contains problem-based learning exercises in which the trainees engage in real-life situations in real time. Set in Hogan's Alley, these practical situations provide trainees different opportunities to apply what new knowledge they learned in the classroom, gym, and on the firing range. Trainees must apply aspects of firearms, legal issues, communications, driving skills, and arrest and control techniques to solve the problem at hand. NATs reinforce new learning in experiential situations that progress in the level of complexity and difficulty.

Beginning in the third week, NATs engage in 13 problem-based exercises that replicate real-life problem-based situations a SA may face. The Practical Applications curriculum incorporates different components learned throughout the New Agents Training Program to include firearms handling, legal issues, communications skills, investigative skills, arrest techniques, and tactical procedures. The Practical Applications instructors evaluate trainees' performance based upon their observed behaviors during the

exercises. These practical exercises become progressively more difficult. Although the exercises emphasize tactical procedures, given the integrated features of the exercises, the trainee must effectively incorporate problem-solving skills using new knowledge from a variety of areas. Performance proficiency relies on how well the trainee applies training in communications, legal procedures, firearms, intelligence collection, vehicle operations, and defensive tactics. Unless the trainee has the capacity to apply the new learning in these exercises, the trainee may not perform successfully.

Practical Application faculty expects NATs to apply *all* (emphasis added) appropriate aspects of the training program to solve the training problems at hand. Practical Applications faculty assesses the trainees' performance in all 13 exercises along a three-point matrix in ten separate dimensions. NATs learn most other subject areas outside of the practical applications curriculum. Practical Application instructors rate successful performance scores as "meets expectations" in the student performance assessments.

*Performance and Suitability Dimensions*

According to Goleman (1997), the workforce is now being judged "not by how smart we are, or by our training and expertise, but also by how well we handle ourselves and each other" (p. 3). Suitability dimensions serve as the performance yardstick of NATs as they progress through their training program. Suitability dimensions are not directly associated with intellectual performance but rather provide a description of acceptable behaviors that defines the conduct associated with the successful performance of FBI SAs. If a NAT demonstrates behaviors, contradictory to those described within the

six suitability dimensions, the trainee risks dismissal from the program and consequently, the organization.

Training prepares individuals to attain acceptable levels of emotional expressiveness relative to the job. (Bar-On et al., 2000). For FBI NATs, the suitability dimensions establish the threshold of emotional competencies required for acceptable behavior and organizational performance. NATs' behavior is assessed along six dimensions designed to determine a trainee's suitability to become a SA. The six suitability dimensions are conscientiousness, cooperativeness, emotional maturity, initiative, integrity, and judgment (Appendix A). The suitability dimensions establish a baseline of acceptable behavior considered suitable for a SA. If a trainee demonstrates a deficiency in any of the suitability dimensions, the trainee's overall performance in the NA Training Program receives additional scrutiny, possibly resulting in the trainee's dismissal.

*New Agents Training Program as Organizational Learning*

In a nontraditional sense, the FBI NA Training Program is an extension of organizational learning, focusing on individual and shared cognitive and behavioral aspects rooted in the organization (Vera & Crossan, 2005). Many federal and state law enforcement-training academies provide general training in police skills to a variety of recruits from different agencies without concern of any particular organization's culture. The FBI NA Training Program exclusively trains its own employees allowing for socialization and indoctrination into the organization. The education provided to the FBI NATs is salient to the interests and problems of the FBI, in response to internal and

external environments, learned by individuals within the organization and imparted to others (Singh, 2006).

Singh (2006) argued that organizational learning is part of a social learning system. Both vertical and horizontal integration of individual and organizational learning entities are required to influence the organization's shared vision and mental model (Singh, 2006). The future of the FBI begins at the FBI Academy with the NA Training Program. In the NA Training Program, NATs learn knowledge and skills to understand the FBI and perform effectively (Argyris, 1977). FBI NA Training combines occupational learning with organizational learning teaching specific skills related to the law enforcement profession while socializing individuals into a traditional organizational culture (Chappell, 2008). Organizational learning encompasses both cognitive and emotional learning required to reassess fundamental assumptions and values to adapt in order to realign individual perspectives leading to transformation.

## Reflective Thinking and Emotional Intelligence in the Learning Process

Reflective thinking, as a part of transformational learning, has been the subject of scholarly debate for decades (Dewey, 1916, 1933; Habermas, 1971; Kegan, 1994; King & Kitchener, 1994; Mezirow, 1991). Classical learning theories that relate adult development and individual learning include constructive development (Kegan, 1994), reflective development (King & Kitchener, 1994), and transformational learning (Mezirow, 1981). An abundance of the current research on reflective thinking is theoretical (Mezirow, 1991; Schon, 1987) or focuses on the qualitative aspects of reflection (Kegan, 1994; King & Kitchener, 1994). Few studies look empirically at the

effects of reflective thinking (Leung & Kember, 2003; Phan, 2007a; 2007b). More recently, emotional intelligence has become popular in academic and organizational groups (Bar-On, 2004; Goleman, 1995; Salovey & Mayer, 1990). Quantitative research involving emotional intelligence is replete due to the popularity of the subject garnered by Goleman (1995) claiming that emotional intelligence may be as important as cognitive intelligence (or IQ) to one's success in life. The literature lacks empirical research studying both of these constructs, together, and their relationship to performance.

Learning is not a single event but rather a process that fosters long-term, permanent changes in behavior through an experience rather than maturation (Maier et al., 2001). Individual learning plays a crucial role to *transformational learning* but may not always lead to performance improvement. Transformational learning is the "process by which frames of reference or mind-sets are changed to generate beliefs or opinions that will prove more true or justified to guide action" (Mezirow, 1991, p. 8). Learning is meaning making resulting from individual interpretations of one's experience (Kegan, 1994; Mezirow, 1991). Transformational learning occurs when assumptions based on experiences assimilate to change due to reflecting on a new experience (Mezirow, 1991).

Learning is biological (Wolfe, 2006), cognitive (Piaget, 1952), and emotional (Salovey & Mayer, 1991; Bar-On, 2008). Learning is based on the brain's ability to relate new information to what it already knows. Relying on patterns, existing networks and environments, the brain seeks places to match new information to stored knowledge (Wolfe, 2006). In terms of brain functions, cognitive learning expands and develops neural circuitry by combining new information into existing knowledge and perceptual

frameworks. Emotional learning engages brain functions that trigger social and emotional behaviors through cognition (Cherniss et al., 1998). Both Dewey (1933) and Mezirow (1991) regard experience as a function of the transaction between the individual and the environment to create meaningful learning.

Learning, problem solving, and validity testing cannot occur without some level of reflection (Mezirow, 1991). Reflection enables individuals to consider their experiences and then reflect on what they know, to build on the knowledge about themselves and their environment. A reflective capacity gives individuals the ability of understanding new knowledge by modifying their own thinking as necessary. Reflective thinking may lead to transformational learning. Experiences are reinterpreted and assumptions are challenged to make meaning then determine the validity of predisposed perceptions through reflective thinking (Kegan, 1994; King & Kitchener, 1994; Mezirow, 1991). The individual's frame of reference or meaning perspective is essential to learning. If the existing perceptions are deemed to be invalid, the result is a new meaning and perspective to the old experience (Mezirow, 1991). Humans organize the results of their experiences to make meaning, but they cannot make meaning of experiences without critically reflecting on the experience (Kegan, 1982). In their everyday lives, most adults learn through experience. Transformation takes place after the individual thinks about the experience then compares the experience to existing knowledge or beliefs. If the individual makes fundamental changes based on the experience then reflective thinking has occurred.

## Theory of Cognitive Development

The theory of cognitive development defines important elements of adult learning. This theory is part of the constructivist philosophy supporting the notion that reflection on personal experiences leads to the construction of an individual's understanding of the world through the generation of mental models (Piaget, 1952; Kegan, 1994). Cognitive development theory states that the capacity for learning and knowledge development is continuous through an individual's life span. The theory describes the process of how an individual perceives, internalizes, and thinks about the world (Piaget, 1952; MacKerarcher, 2004). Cognitive development continues through adulthood, in response to the individual's interaction with the environment or life's demands (Kegan, 1982, 1994; Mezirow, 1991). Constructivism delineates a cognitive process whereby learners construct their own knowledge through interaction with their environment and reflection of their experiences (Kegan, 1994).

### *Piaget and Cognitive Development*

Recognized as an influential architect of constructivism (Kegan, 1980), Piaget initiated the study of developmental processes for *lifelong* (emphasis added) cognitive development. Through related developmental research studies, Piaget's work in cognitive development contributed to the foundation of experiential learning. Grounded in child and adolescent studies, Piaget (1952) acknowledged the link between one's new understanding and prior learning through knowledge as a cognitive structure he referred to as mental schemes.

Piaget approached cognition as a systemic function of the individual (Fosnot, 1996). Cognitive structures change through the processes of *assimilation* and *accommodation* (Piaget, 1952, 1972) whereby, individuals organize experiences within one's cognitive structure or perspective to make meaning then construct knowledge. According to Piaget, new experiences are assimilated into existing frames of reference that does not result in a change of behavior or perspective. Accommodation occurs when the individual's frame of reference of the external world changes because of the new experience, thereby the keystone of experiential learning.

At times, the process may present an opportunity to acquire new knowledge to make sense of new situations, resulting in behavior changes, in response to interactions with one's environment (Piaget, 1972). Piaget contends that accommodation results from the individual's reflective, integrative actions, changing behaviors to maintain cognitive balance between new knowledge and the existing environment (Fosnot, 1996). Knowledge construction results when the individual actively integrates new impressions with prior learning (Piaget, 1972). Knowledge develops from actions and an individual's reflection on those actions.

Piaget's theory established the foundation for other subsequent adult cognitive development constructs that extend beyond adolescent development (Kegan, 1994; King & Kitchener, 1994), which are relevant to this research project. Piaget's work grounded Mezirow's (1991) theory of adult transformational learning. Reflection initiates the transformational learning process by influencing cognitive structures through which

context for a frame of reference results from an experience (Mezirow, 2000). According to Mezirow (1991), *meaning perspectives* organize one's cognitive structure to help assimilate experiences into meaningful learning. The core of individual learning requires a cognitive structure that incorporates prior learning in a way that both the experience and existing meaning perspectives are influenced creating a new perspective building on the notion of a frame of reference.

*Kegan's Constructive-Developmental Theory*

The true meaning of education lies in changing the *how* an individual knows (Kegan, 2000). Although foundational cognitive development theories focus on formative development through childhood years (Piaget, 1952), Kegan's (1980) constructive-developmental framework applies to cognitive development over the human lifespan. According to Kegan (2000), the individuals pass through four quadrants: cognitive, affective, interpersonal, and intrapersonal in the development of the psychological self. Labeling himself as a neo-Piagetian, Kegan's constructive-development framework combines several aspects of Piaget's research that are applied in an adult development context to include cognition, emotions, developmental processes of cognitive development, intrapersonal and social influences of development. Where the physical and abstract experiences influence child cognitive development (Piaget, 1952), adults also engage an internal experience that emerges in a self-concept (Kegan, 1980).

What differs is Kegan's (1982) perspective on constructive development. Kegan considered the person as an "activity" (p. 7) and a thing that matures into a new form.

Here, the adult moves through a continuum of an existence, a sense of self-recognition "*that* I am"; that expands to a sense of "*what* I am", then develops into a future sense of "*who* I am" (Kegan, 1980, p. 376). Kegan (1980) centered the constructive-developmental framework on meaning systems through which a human *being* (author emphasis) makes meaning. Meaning systems influence and organize thinking and behavior thereby shaping the individual's experience. The core configurations of individual meaning systems are not unique as one develops measures to understand meaning systems of others.

The core of constructivism rests with the idea that learners construct their own knowledge based on experience (Fosnot, 1996; Kegan, 1980; Moon, 1999). Learning results from knowledge transference, new knowledge replacing existing knowledge, thereby transforming the individual's mindset (Kegan, 2000). According to Kegan, transformation is a qualitative change in the way an individual knows that leads to significant changes in *how* an individual knows. But not all learning is transformative. The chief distinction between learning that is "in-*form*-ative" (sic) and "trans-*form*-ational" (sic) is whether the objective of the learning affects the existing frame of mind (Kegan, p. 37).

Kegan (2000) posits that in-*form*-ative learning increases the *quantity* of knowledge, skills, or cognitive capacities changing *what* an individual knows. In this context, in-*form*-ative learning only expands knowledge within an existing frame of reference. Trans-*form*-ational learning changes *how* an individual knows by

reconstructing an existing mindset using new knowledge to fill and expand the capacity for learning (Kegan). The change in an individual's knowledge through trans-form-ational learning is deeper and long lasting, affecting not only the amount of knowledge but also one's perspectives and behavior.

## Transformational Learning

Theorists approach individual change and transformation from different perspectives (Kegan, 1981; King & Kitchener, 1994; Mezirow, 1991). Cognitive development, characterized as changes in thinking patterns, is at the core of transformational learning (Merriam, & Clark, 2006). Existing cognitive theories establish a timeline that delineates when particular types of transformation occur over an individual's lifetime (Kegan, 1994; King & Kitchener, 1981). Transformational learning occurs through individual objective or subjective reframing of beliefs, value, and assumptions (Kegan, 1994; King & Kitchener, 1994; Mezirow, 1991). Transformational learning is a "growth of the mind" (Kegan, 1994, p. 34). In transformational learning, learning is a process of constructing or revising the interpretation of the meaning of an experience based upon a prior interpretation to guide future behavior (Mezirow, 1996).

As the learning process constructs or revises, interpretations of the significance of experiences, new *meaning schemes* can emerge (Mezirow, 1990). Meaning schemes are the "knowledge, beliefs, value judgments, and feelings that constitute a specific interpretation" (Mezirow, p. 61). They originate from and are connected to meaning perspectives to create a frame of reference or structure through which all future

experiences will be compared (Mezirow, 1991). Transformation results through objective or subjective reframing of one's own existing frames-of-reference by critical reflection.

*Mezirow's Theory of Transformation*

Mezirow's (1991) theory of transformative learning centers on an individual's ability to make meaning through reflection. Evolving from a constructivist approach, transformational learning theory considers how individuals learn by creating meaning from experiences by altering existing frames of reference or meaning perspectives (Mezirow, 1991, 2000). Wilson, and Burket (1989) characterize the individual as a repository of social and cultural values, perceptions, and experience. Individuals engage a ten-phase process to transform existing frames-of-reference or meaning perspectives, described by Mezirow (1991) as: 1) a disorienting dilemma, 2) self examination of feelings of guilt or shame, 3) a critical assessment of existing assumptions, 4) recognition discontent and transformation are shared, 5) exploration of new roles, relationships or actions, 6) planned course of action, 7) acquisition of knowledge and skills to implement the plan, 8) provisional trying of new roles, 9) building competence and self-confidence in new roles and relationships, 10) reintegration into one's life on the basis of conditions dictated by one's new perspective (p. 169). After individuals progress through these phases, transformation leads to emancipatory learning where individuals develop an awareness of a frame of reference within an environment that limits or controls (Friere, 1970; Habermas, 1971; Mezirow, 1991). They see the world as a reality in transformation (Friere).

For the FBI NAT, transformation encompasses learning new roles, responsibilities, and ideals. Most Trainees are new to law enforcement, learning to adapt to greater expectations that those imposed on ordinary citizens. Reflection becomes more important in order to make meaning of a new world with new demands. In this context, organizational culture influences individual learning, often challenging existing perceptions. Culture often emphasizes learning through meaning schemes formed within traditional assumptions. Unlike Piaget, Mezirow noted the important influence culture, including organizational culture, has on learning. Still, transformational learning may not consider, individually or collectively, the local culture that can create a barrier to praxis or reflection (Tennant, 1993). Within local culture, like organizational culture, rational discourse is often de-emphasized in favor of traditional behaviors. Such as position is exemplified in a learning environment like New Agents Training, where the organization often fails to foster critical reflection as part of the learning strategies, instead, promoting memorization as the preferred learning style (Mezirow, 1996).

Fisher (2003) pointed out that critical reflection is bound by the context in which reflection was initiated. Reflection can result from an exercise in practice or as part of the learning process; Learners must consider current knowledge and assumptions to open up to new ideas and perspectives. Critical reflection that leads to transformational learning in an organizational learning environment turns to an individual's ability to reason, something not dictated by culture. For law enforcement organizations, such as the FBI, critical reflection must occur not for purposes of emancipation but socialization within a

unique culture. Transformation occurs through communicative learning to understand how the individual fits within the organization and its culture. For NATs must engage in critical reflection to assimilate the new experiences and accommodate the changes necessary to fulfill the organizational and social expectations of being an FBI SA.

## Reflective Thinking

Reflective thinking is the process of critically evaluating content, process, or assumptions to interpret and make meaning of an experience (Dewey, 1933; Mezirow, 1991; King, 2000). Reflection is an essential part of the learning process, merging past interpretations with new experiences to establish future perceptions (Mezirow, 1991) taking on different functions to meet the needs of the individual. Mezirow presented that reflective thinking occurs in four different levels: habitual actions, thoughtful action without reflection (sometimes referred to as understanding), thoughtful action with reflection (sometimes referred to as reflection), and critical reflection.

Reflection is a critical part of learning because it brings together prior knowledge with experiences to assimilate new interpretations that assume different functions, depending upon the purpose to the individual (Mezirow, 1998). Individuals make meaning of experiences through critical assessment of an experience. Individuals must critically assess the influence of the experience on their current perceptions. Critical reflection spurs transformation of existing meaning perspectives that result from a conflict between current assumptions and new knowledge (Mezirow), whereby, new frame of reference or meaning perspective emerges. Individuals learn when meaning perspectives are challenged, assessed, and validated resulting in a transformation of

meaning schemes through critical reflection. Transformation requires deep-rooted changes in one's basic assumptions about knowledge and learning achieves through critical reflection (Kegan, 1994; King, 1992; Mezirow, 1991).

Foundational educational research has examined the relationship between knowledge and learning from a different of perspectives (Kegan, 1994; King & Kitchener, 1994; Hofer, 2001). Relationships between reflective judgment and age, education, and individual epistemic assumptions are supported by research indicating that reflective thinking occurs in adulthood where problem-solving abilities are influenced by one's epistemic assumptions (Kitchener et al., 1993; King & Magolda, 1996; King, et al., 2006). More importantly, current educational researchers have explored the relationship of reflective thinking with other theoretical learning concepts to include epistemological beliefs (Leung & Kember, 2003; Phan, 2006), student approaches to learning (Phan, 2006, 2008), and academic achievement (Phan, 2008). Emerging from the research is a growing affirmation that the learning process is influenced by an individual's way of knowing and way of making meaning (King & Kitchener, 1994; Mezirow, 1991; Kegan, 1994). As most research in this area resides in academic settings with university students, none of the research, found to date, focuses on reflective thinking practices of adults engaged in law enforcement training environment.

*Dewey's Reflective Thinking*

Reflection is comprised of cognitive and affective activities that individuals employ to examine experiences to create new understandings (Boud, D., Keogh, R., & Walker, D., 1985). Presenting the seminal analysis of reflection (Mezirow, 1991), Dewey

provided the theoretical framework upon which all others are built. Dewey stated, "Learning is learning to think" (p. 78). Mezirow (1998) described learning as a turning back on experience. Reflection bridges the meaning of separate experiences by reconstructing and reorganizing experiences (Dewey, 1933; Rodgers, 2002). Huxley (in Kegan, 1983) aptly described experience as not what happens to an individual but rather what is done with what happens to the person. To expand on Dewey's vision, the meaning made from experience is within one's control; thereby, directly influencing what one's reaction may be (Rodgers, 2002).

Dewey's (1933) reflective process parallels a six phase scientific method: 1) an experience outside the realm of the expected based upon routine or habitual actions; 2) perplexity or confusion (referred to by Mezirow (1991) as a disorienting dilemma); 3) analyzing and clarifying the problem; 4) generating a tentative interpretations (hypotheses) of the experience leading to certain consequences; 5) selecting the most effective hypothesis; 6) asserting a plan of action to test the hypothesis (p. 150). From his study of non-traditional age women returning to college in specialized re-entry programs, Mezirow (1991) created the phases of perspective transformation that echo Dewey's reflective process.

Information must be understood before it becomes knowledge. Comprehension occurs through constant reflection of various aspects of the information in relation to each other. Here, Dewey recognized reflection as a process to create knowledge. Individuals make meaning through the reflective process to move from an experience to develop a greater understanding through relationships with the environment. Habitual

interpretations of daily life are reassessed through reflection to test the validity of meaning perspectives that went unquestioned (Mezirow, 1991).

Dewey (1933) emphasized the relationship between the individual and the environment. Individuals learn indirectly through the environment. Here Dewey (1916) attributes a lack of reflection on the experience to nothing more than an impulse or routine action. Routine or habitual action is an automatic learned behavior executed with little or no thought (Kember et al., 2000; Mezirow, 1991). Reflection occurs only if the routine actions did not work as planned requiring assessment of the experience and assumptions (Redmond, 2006). Reflective thought, "makes *thinking* itself into an experience" (original emphasis) (Dewey, 1944, p. 150).

Reflective thinking is central to all forms of learning, problem solving, and validity testing. Individuals adapt to change after critical assessment and interpretation of an experience (Mezirow, 1991; King, 1992). Dewey saw reflection as means to examine assumptions and validate assertions providing a basis for change or transformation (Mezirow, 1991). He stressed a fundamental connection between the learner and the environment resulting in transaction and experience. Dewey established distinct criteria that characterize reflective thinking as: 1) a meaning-making process; 2) a rigorous, systemic way of thinking; 3) community learning; and 4) a set of attitudes (Rodgers, 2002, p. 845). Attitudes can either enhance or inhibit learning. Individuals who develop attitudes favorable to inquiry and testing can better employ reflective methods (Dewey, 1933). One's knowledge and awareness can broaden through reflection based on whole-heartedness, open-mindedness, directness, and responsibility (Dewey, 1944, 1933).

*Habermas and Reflective Thought*

Habermas's work supports Dewey's (1933) position in that reflection is a tool for knowledge development (Moon, 1999). Focusing on the epistemological aspect of knowledge development, Habermas (1971) believed that reflection is necessary for the generation of knowledge with human communication as the fundamental element of reflective thought. Communication grounds learning and understanding (Habermas). Learning occurs through dialogue, which, in turn, creates common understandings leading to critical reflection and change in personal perspectives (Habermas, 1987; Mezirow, 2003). Communicative learning allows learners to redefine their own values, beliefs, and meaning over those of others (Mezirow, 1996). Critical reflection creates awareness of personal assumptions based on experiences, discourse, or actions leading to increased communicative competence.

Habermas' (1971) differentiated between the types of knowledge that influences the ability to reflect within the learning process: instrumental, practical, and emancipatory knowledge. Each type of knowledge emanates from different learning perspectives with differing results. Based on task-oriented performance, instrumental knowledge originates through control of the environment or predicted observable events, thus prompting appropriate behaviors that provide individuals with the ability to cope with the external world (Habermas, 1971). External sources and observable phenomena supported by empirical methodologies produce practical knowledge that help individuals form the basis of usable knowledge through experience and established evidence.

Emancipatory knowledge emanates from self-reflection after an individual recognizes forces that limit options or control lives resulting in a change in values and assumptions.

*Epistemology and Meaning Making*

Epistemology is the essence "not of *what* we know but *how* we know" (Kegan, 2000, p. 52) (original emphasis). An individual's beliefs about knowledge and how one knows, within the learning process, affect knowledge acquisition and generation (Hofer, 2001). Educational research corroborates the relationship between knowledge and learning from different perspectives (Hofer, 2001; Kegan, 1994; King & Kitchener, 1994). Findings affirm the relationship of an individual's way of knowing and way of making meaning to the learning process (Kegan, 1994; King & Kitchener, 1994; Mezirow, 1991).

Transformational learning must have some level of epistemological change to accompany behavioral changes (Kegan, 2000; Mezirow, 2000). An individual's way of knowing or frame of reference must transform resulting in a change in the level or quality of knowledge (Mezirow). Baxter Magolda (1992) and King and Kitchener (1994) concluded that individuals' ability to problem-solve was determined by their ways of knowing. Theorists continually debate the reasons how individuals learn and come to "know" (Belenky, Clinchy, Goldberger, & Tarule, 1997; Kegan, 1994; King & Kitchener, 1994; Mezirow, 1981).

Individuals generate meaning of new information based on how they process new experiences. Epistemological beliefs determine how individuals engage in learning, particularly in unfamiliar learning environments, to create new perspectives (Hofer,

2001). All adult learners bring a variety of work, life, and educational experiences to the learning environment. They construct meaning and reframe their perspectives based upon what they learn and experience. The more the learner believes that knowledge is generated (deep level learning) rather than acquired (surface level learning), the more likely the learner will engage in reflection (Phan, 2007).

Baxter Magolda (1992) describes four distinct ways of knowing and reasoning in her epistemological reflection model: absolute, transitional, independent, and contextual. An individual's ways of knowing are comprised of three elements: cognitive (making meaning of knowledge), interpersonal (view of self in relation to others), and intrapersonal (perception of a sense of identity) (Baxter Magolda). Based upon a longitudinal study of students through their college years and two years beyond, Baxter Magolda found that in later years, individuals integrate relational and interpersonal modes of knowing. She referred to this mode of knowing as *contextual knowing*. Embedded in adult cognitive development, contextual knowing is constructed knowledge that connects emotions to personally held assumptions, balanced through reflection (Merriam & Cafferella, 1999; Merriam & Clark, 2006). Contextual knowing supports critical reflection and reflective judgment (Baxter Magolda). Transformational learning (Mezirow, 1991) and constructivist developmental models (Kegan, 1994; King & Kitchener, 1994) integrate personal epistemological ideas and processes to make meaning of life experiences.

Epistemological perspectives also influence reflective capacity (Akerjordet & Severinsson, 2007; Lucas & Tan, 2007). Individuals develop the potential to solve

problems and develop the capacity for reflective judgment to solve problems with no definitive solution as they mature (King & Kitchener, 1994). One's capacity for reflective judgment develops within adulthood, whereby only adults can become critically reflective of their own assumptions, a fundamental difference in problem solving abilities between adults and children (King & Kitchener, p. 9). *Epistemic cognition* formulates the basis of reflection and reflective judgment prompting individual reflection on the limits and certainty of knowledge and knowing (King & Kitchener; Mezirow, 2000). Through epistemic cognition, adults develop an understanding of the process and limits of knowing to justify their assumptions about solving ill-structured problems. Individuals develop a higher-level cognitive ability to determine the solvability of problems or the true value of solutions (King & Kitchener). The reflective thinking process culminates in reflective judgment (King & Kitchener, 1994).

*Reflective Learning*

Kegan (1994) contended that reflective thinking is an active separation of the whole self where the mind stands apart from its own values, opinions, and perspectives to avoid complete identification with them. Reflective thought allows individuals to manage their reactions because they are *object* rather than *subject* of one's being (Kegan). Reflective thinking that results from informational learning that "leads in," cannot become transformational unless the learning "leads out" from established habits of mind (Kegan, 1994, p. 232). In other words, reflection not only must consider learning that exceeds an individual's level of knowledge and skills, reflection must transcend to the individual's existing frame of reference to enact change.

Learning, in and of itself, may not necessarily result in improved performance. Reflection, moreover critical reflection of new learning based on experiences, changes a person's perspectives and leads to improved performance (Mezirow, 1991). Critical reflection is affected by various realties and numerous sources of control connected to one's knowledge construction (Pietrykowski 1996). Individuals develop various learning strategies to process information and acquire behaviors to accomplish tasks depending upon the perspective of the learner (Birzer, & Nolan, 2002).

As the process by which individuals make sense of experiences and their environment, reflection is essential to learning. For learning to occur through critical reflection, individuals must be open-minded to consider alternate viewpoints in discourse, be responsible for seeking truth and apply new learning, and reflect critically to evaluate themselves and the organization to make meaningful changes (Dewey, 1933). Engaging in reflection as part of the learning process can create discomfort and conflict, forcing the learner to evaluate behaviors, values, or assumptions judged against new learning, ideas, or viewpoints, opening the way for perspective transformation (Dewey, 1933; Habermas, 1971; Mezirow, 2000). Reflection on the new knowledge helps the individuals transform existing meaning schemes leading to change and emancipation (Mezirow, 1996). A transformational learning event must incorporate activities that encourage critical reflection of the learners.

*Reflective Learning and Law Enforcement Education*

Law enforcement educators incorporate adult learning principles into aspects of academy training but appear to relate those principles on a surface level rather than on a

deeper level to engage learning that is more reflective (McCoy, 2003). Many public service educators emphasize expert knowledge communicated through rote learning. Rarely do they integrate critical reflection into the learning. In fact, critical reflection may actually be discouraged (McCoy). FBI New Agent training appears to be consistent in this learning approach (FBI, 2007). Reflective learning is not incorporated in most classroom learning for NATs. Many classes are delivered in segments, disconnected from other classes or material even if the subjects are related. The focus is on disseminating information rather than encouraging reflection to stimulate knowledge building.

Birzer and Nolan (2002) studied the learning strategies of police officers responsible for community-oriented policing. Community-oriented policing was described as a fundamental change from the traditional policing approach (Birzer & Nolan). They found that younger officers with less experience adopted more traditional learning strategies, took fewer risks, and relied on more experienced officers to control their learning. Childs (2005) argued that the lack of critical reflection in the education of firefighters produces individual incapable of responding and adapting to complex problem-solving situations. Critical reflection stimulates thought and reduces the potential for non-learning, described as patterned behavior, and non-reflective learning, which is one's reliance on explicit guidance for learning.

Effective training requires a transfer of learning to job application. If trainees are to maximize job performance, then law enforcement training must closely replicate the job environment (Mullins, 1992). The learning environment directly influences critical reflection. Learners must trust the environment. They must feel confident that their self-

worth is respected and that their needs will be met. More importantly, for critical reflection to engage, learners must feel safe to have their views challenged and may challenge others (Fisher, 2003). Critical reflection is essential to transformational learning of law enforcement officers to include FBI NATs.

*King and Kitchener's Theory of Reflective Judgment*

Grounded in the cognitive-development assumptions (Piaget, 1952), constructive-developmental (Kegan, 1980, 1994), and personal epistemology theories (Baxter Magolda, 1992; Hofer, 2001; King & Kitchener, 1994), reflective judgment theory asserts that meaning is constructed, individuals make meaning of their experiences, and transformation occurs as a result of individuals interacting with their environments (King & Kitchener, 1994). King and Kitchener's (1994) Reflective Judgment Model (RJM) establishes the progression of individuals' cognitive development in reasoning, as they mature, through seven stages of three progressive levels formulated upon epistemological assumptions about knowledge and knowledge acquisition focusing on the meaning construction and making judgments resulting from interactions with the environment (Kitchener, King, & DeLuca, 2006). Individuals progress through each stage, as they understand concrete views of knowledge, then move toward understanding multiple abstract views of knowledge building the capacity for transformation as they mature (King & Kitchener, 1994; 2004). Stages 1 – 3, Pre-Reflective Thinking and Stages 4 – 5, Quasi Reflective Thinking occur during early childhood and adolescence prompting the progressive development of epistemic cognition (King & Kitchener, 1994). In the RJM, Reflective thinking occurs well into adulthood within Stages 6 – 7. At this stage of

maturity, adults have the ability to assess beliefs, assumptions, and interpretations, continuously, comparing them to prior knowledge and frame of reference. Individuals reason to support new judgments then construct knowledge by re-evaluating assumptions and prior knowledge within the context of available information and the environment (King & Kitchener, 1994).

The capacity for reflective thinking expands understanding that prompts change in a person's frame of reference critical to transformational learning (Mezirow, 2000). In 2007, Lucas and Tan studied undergraduate students engaged in a work-place learning program to examine the personal and intellectual changes experienced as the students progressed through the accounting and business program then entered employment. In year three, students received professional placement and continued their studies after which they appear to develop the reflective capacity to improve their academic performance in their final year. Focusing on the epistemological reflection (Baxter Magolda, 1992), reflective judgment (King & Kitchener, 1994), and reflective thinking (Mezirow, 1991) models, Lucas and Tan argued that the development of reflective capacity is more a result of interpersonal and intrapersonal features and not of cognitive development, thereby implying that experiential learning in a professional context may be a greater contributor to reflective capacity.

*Levels of Reflective Thinking*

The active construction of knowledge begins with reflective thinking. Individuals construct interpretations of assumptions and perspectives on assessments across contexts (Mezirow, 2004). Reflective learning builds on the developmental progression of

reasoning about epistemic cognition that occurs in the latter stages of cognitive development (King & Kitchener, 1994). Reflective thinking enhances the cognitive process providing adults the ability to analyze issues and construct solutions for ill-structured problems (Kitchener et al., 2006). The reflective process is viewed as a hierarchy of interrelated stages of learning ranging from nonreflection to reflection (Mezirow, 1991; Kember, et al., 2000; Peltier et al., 2005). Learners clarify meaning and engage in reflective judgment and transforming meaning schemes at different phases (Mezirow, 1996). Transformational learning not only relies on the learning experienced by the individual who acts on new meaning schemes; but, also is affected by other factors within the learning process (Pietrykowski, 1996).

Most existing research into reflective learning focuses on the process of reflection. Although limited, emerging empirical research concentrates on the hierarchical levels of reflective learning (Kember et al., 2000; Leung & Kember, 2003; Peltier et al., 2005). The process itself is one of awareness that may lead to change after critical analysis (Peltier et al.). Further research indicates that the approach to learning used by the individual (surface level or deep level) directly influences the level of reflective learning and the out come of learning (Phan, 2006, 2007a). An individual can approach learning from either a surface or deep level depending upon the intention of the learner (Moon, 1999). An individual who approaches learning from a surface level does not process the information to make meaning but rather intends to learn only for an immediate need such as to pass a test or answer questions. Surface level learning accommodates the cognitive structure to increase knowledge but not to make a qualitative

change in knowledge (Moon, 1999). Individuals who engage learning at a deep level aim to assimilate new learning, to understand the knowledge in terms that relate to the individual in order to make meaning and change their views or assumptions.
The deep level approach to learning is important to the level of reflection applied in learning situations (Phan, 2007a).

Phan (2006, 2007a) conducted three separate studies of learning approaches as they related to the level of reflective thinking imposed by university students. In his 2006 study, Phan examined the direct and indirect effects between learning approaches, epistemological beliefs, reflective thinking, and academic performance. He found a causal relationship between the student's approach to learning and the level of reflective thinking where surface learning approach predicted habitual action and deep learning approach predicted understanding and critical reflection. Deep learning, habitual learning, and critical reflection were predictive of academic performance. Epistemological beliefs influenced learning approaches and all four stages of reflection. In the second study (Phan, 2007a), he explored the causal relationship between students' learning approaches, self-efficacy beliefs (Bandura, 1977b), stages of reflective thinking, and academic performance. Self-efficacy positively predicted the stages of reflective thinking. Critical reflection and understanding negatively predicted academic performance. With critical reflection as the exception, the remaining stages of reflective thinking related causally to student learning approaches in a unidimensional manner. Following those studies, Phan (2008) completed a longitudinal study examining the causal relationship between epistemological beliefs, learning approaches, and reflective thinking on

academic performance. This time Phan found that reflective thinking is not an independent predictive indicator of academic performance, but rather, a product of epistemological beliefs and approaches to learning.

Influenced by Dewey (1933), Mezirow (1991), and Schon (1987), Kember et al. (2000) established four constructs of reflective thinking that provided a protocol for assessing the levels of reflection. This research rested on Mezirow's (1991) premise that reflective thinking occurs in four different levels: habitual actions, thoughtful action without reflection (sometimes referred to as understanding), thoughtful action with reflection (also referred to as reflection), and critical reflection. Each level of reflective thinking represents a higher-order cognitive function that results from either the reflective or nonreflective actions. The individual engages the actions to examine the validity of prior learning (Mezirow, 1991). The level of learning individuals engage indicates the level of reflection required for the individual to make meaning and the learning approach taken by the individual.

Research supports the existence of levels of reflection as posited by Mezirow (1991) and Kember et al. (2000) (Lie, 1006; Peltier et al., 2005; Phan, 2007). Peltier et al. (2005) suggest that learners who learn through habitual action are those who focus only on what is required for success rather than reflect to broaden their scope of learning or increase the quality of the learning experience. During the course of the New Agents Training Program, FBI faculty have observed this attitude among the trainees whose greater concern appears to be the successful completion of the program rather than building their knowledge and experience for successful job performance once in their

field assignments (D. Moyet-Trerotola, Supervisory Special Agent and FBI Academy instructor, personal communication, February 5, 2009). This attitude may be reinforced by the dismissal policies that limit trainees to two academic test failures whereas performance in the problem-based exercises, although evaluated, is not considered academic material and therefore not a threat to their employment (FBI, 2009b).

To summarize, individuals who engage in reflection or critical reflection seek deep level learning possibly leading to a change in personal beliefs and assumptions (Dewey, 1933; Leung & Kember, 2003; Mezirow, 1991). Reflection at higher levels invokes greater reflective processes to critique assumptions about content or process (Mezirow, 1991; Kember et al., 2000). Understanding the conditions for reflective thinking is crucial to enhancing the learning experience that leads to improved performance.

*Critical Reflection*

To understand intentions, values, morals, and feelings as part of human learning, individuals must engage in critical reflection (Mezirow, 1998). Critical reflection prompts individuals to question epistemic, social, cultural, and political assertions upon which personal perspectives have been formed (Dewey, 1933; Mezirow, 1978). Mezirow (1991) viewed critical reflection as the critique of the assumptions upon which personally held beliefs lie. Individuals change their views and assumptions upon which sense is made of self, others, and their environment by challenging existing meaning perspectives. Critical self- reflection of assumptions to make meaning allows for individual objective or

subjective re-framing of assumptions for problem solving (Mezirow, 1998). Individuals analyze problems to improve performance through objective re-framing of perspectives. Critical self-reflection challenging current views of the world help individuals transform frames of reference through subjective re-framing (Mezirow, 1991).

Transformational learning requires critical reflection to understand goal, values, morals, and feelings through the learning process (Mezirow, 1998). Critically reflecting on assimilated epistemic beliefs and rational discourse validates new assumptions leading to transformation (Mezirow, 2004). Unless reflection is engaged, learning becomes informational rather than transformational. True transformational learning occurs when individuals alter their habits of mind (Mezirow, 2000) after critically reflecting upon and questioning the validity of existing assumptions. Learners who critically reflect are more likely to have reflected upon their practice than learners who tend to limit reflective learning to less reflective processes (Kember et al. 2000).

*Questionnaire for Reflective Thinking (QRT)*

Regarding reflective thinking, most measures of reflection are qualitative instruments designed for a third-party observer to elicit information or make observations of behaviors (Kegan, 1994; King & Kitchener, 1994). Although naturalistic measures yield descriptive and meaningful information (Wittenburg, 2000), the need for quantitative research in reflective thinking is significant. Based upon Mezirow's transformational learning construct, the Questionnaire for Reflective Thinking (QRT) was designed as a quantitative four-scale instrument measuring the transformational

constructs of habitual action, understanding, reflection, and critical reflection (Kember et al., 2000). Consistent with Mezirow's (1994) definition, *understanding* (emphasis added) as a measure in the QRT is commensurate with Mezirow's term *thoughtful action* (Kember et al.). Likewise, *critical reflection* corresponds with *premise reflection* (Kember et al.). The QRT focuses on a single measure of the student's perception of how they approach thinking and learning.

As a self-report measure, the QRT was designed to identify the individual's self-perceived levels of reflective thinking (Kember et al. 2000). Kember et al. clarified the four stages of reflective thinking posed by Mezirow (1991) to explain, succinctly, how individuals engage the process. Phan (2007a) found that "using a latent variables approach enabled analysis of the psychometric properties of the QRT, and identified the causal determinants and mediators of the variables within the one conceptual framework" (p. 803).

Mahardale et al. (2008) studied the influence of problem-based learning in developing reflective thinking skills in young students. A comparative study evaluated two groups of students to determine if problem-based learning affected reflective thinking. Using a modified version of the QRT (Kember et al., 2000) supplemented by student interviews and instructor survey, the research measured the levels of reflective thinking used by each group. The findings supported the hypothesis in that students engaged in problem-based learning demonstrated higher levels of reflective thinking when compared to the control group (Mahardale et al., 2008). Mahardale et al.'s

study confirmed that reflection engages both cognitive and affective learning domains and that problem-based learning promotes reflective practice and a deep level approach to learning.

Lie (2006) contended that problem-based learning stimulates reflection and critical reflection in a study of the relationship of the reflective thinking process within a problem-based learning environment. In a study of university students using the QRT, Lie found that the more senior students tended to rate themselves higher in reflective thinking. Research provided limited support for the hypothesis that students increase in their levels of reflection as they progress. Lie's study supported Kember et al.'s (2000) findings and provided data to suggest possible trends in students' reflective developments, especially in PBL environments (Lie, 2006).

Within the design of their study, Lucas and Tan (2007) suggest that the QRT (Kember et al., 2000) was not a suitable instrument to identify the levels of reflective thinking. Using a range of exploratory analyses, they found that in the habitual action, understanding, and reflection scales, the QRT does not produce scores with internal consistency or provide sufficient scope to identify variations in responses. To the contrary, critical reflection scale did demonstrate internal consistency and provide sufficient scope to identify variation in responses. This finding suggests that the QRT offers value as a suitable measure as this study will consider the predictive values of critical reflection as a subscale of reflective thinking.

*Other Measures of Reflective Thinking*

Other instruments that measure levels of reflective thinking have been developed (Peltier et al., 2005), but none were found appropriate for this study. For example, in a doctoral study, Wittenburg (2000) validated a similar self-report measure called the Dispositions of Reflective Thinking Questionnaire (DRTQ) to quantify reflectivity and assess dispositions among pre-service teachers. Unlike Kember et al.'s (2000) QRT, Wittenburg and McBride's DLRQ is a mixed model measuring responses along a five-point Likert Scale from "strongly agree" to "strongly disagree" with a comment box to allow the respondent to explain a response (Wittenburg, 2000, p. 55). After a pilot test of the DRTQ, Wittenburg reported strong instrument reliability and content validity. Not to diminish the contribution of Wittenburg's research, no other research was found using the DRTQ as measure of reflective thinking, thereby limiting its usefulness for this study.

## Emotional Intelligence

Emotions and learning are inseparable constructs in most adult learning theories (Illeris, 2007). Consideration of the relationship between emotional intelligence on performance in a learning environment is a logical consideration. Emotions categorize physiological, perceptual, experiential, and cognitive changes into rational experiences (Mayer, Caruso, & Salovey, 2000b). Feelings and emotions play a powerful role in the learning process as theorists argue they can either obstruct or motivate learning where meaningful learning is grounded one's emotional connection with the self and world (Dirkx, 2001; Mezirow, 1991). Emotions' influence on learning extends further than enhancements or impediments in the learning process. Emotions and feelings are integral

to an individual's ability to perceive and process information derived from interactions with the external environment used to construct meaning (Dirkx, 2001; Merriam & Cafferella, 1999; Mezirow, 1998).

Emotional intelligence provides a capacity for constructive thinking that guides by responsible actions (Low & Nelson, 2005). Emotional intelligence is not a single construct but rather is comprised of a set of skills within a range of dimensions upon which skill levels may vary (Salovey, Detweiler-Bedell, Detweiler-Bedell, & Mayer, 2008) thereby, making individual abilities that exceed the limitations of cognitive intelligence more significant (Epstein, 1998). Ever developing through life's experiences and learning, levels of emotional intelligence improve with maturity as individuals become more proficient at managing their own emotions and social abilities (Bar-On, 2000; Goleman, 1998).

Emotional intelligence has emerged as a prominent theoretical framework in education, management, and psychological research within the last decade (Bar-On & Parker, 2000; Goleman, 1998; Mayer, Caruso, & Salovey, 2008). Growing from the concepts of social intelligence (Bar-On, 2006; Mayer & Salovey, 2004) and Gardner's (2004) conceptualization of personal intelligences (discussed below), emotional intelligence addresses the affective dimension of social problem solving leading to development of social behaviors (Mayer & Salovey, 2004).

Researchers cannot agree as to whether emotional intelligence is an individual ability, a non-cognitive skill, a capability, a competence (Akerjordet & Severinsson, 2007), or even a valid concept (Locke, 2005). Cherniss (2001) suggested that regardless

of definition, emotional intelligence is a combination of cognitive and emotional abilities. Bar-On and Parker (2000) argued the importance of social competence in that individuals must first understand the environment then regulate their behavior to achieve social tasks and acceptable outcomes. Disagreement continues among researchers as to how emotional intelligence should be measured (Van Rooy, & Viswesvaran, 2004). Although research of emotional intelligence is replete, mainly because of its broad popularity, conflicting findings offers little about the predictive value of emotional intelligence (Mayer & Salovey, 2004). Regardless of theoretical inconsistencies and diverse definitions, the usefulness, predictability, and development of emotional intelligence must be considered to understand fully its practical implications and potential benefits. Otherwise, as Kelly, Longbottom, Potts, and Williamson (2004) asserted, research failing to do so is analogous to "throwing the baby out with the bath water" (p. 224).

*Types of intelligence*

Researchers have struggled to define cognitive intelligence since the early 20th Century. To date, a general definition has not been accepted. Although most definitions have focused on the aspects of cognitive function, theorists realized that individual intelligence encompassed more. A commonly accepted definition of intelligence is "the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment" (Wechsler, 1958, p.7). Wechsler (1940) also identified nonintellective factors of cognitive intelligence such as drive, energy, and impulsiveness normally dismissed from cognitive measures. He recognized the importance of these factors in developing the capacity to cope with one's environment

that is necessary for intelligent behavior. Thorndike (1920) broadened the definition of intelligence as an individual's ability to manage and understand the world apart from one's cognitive ability through abstract (ideas), mechanical (concrete objects), and social (people) intelligence.

Current scholars have defined intelligence as a group of mental abilities (Mayer, Salovey, & Caruso, 2008). Sternberg and Grigorenko (2000) further distinguished *academic intelligence* as that which is commensurate to intellectual intelligence) from *practical intelligence* as everyday intelligence responding to adapting, shaping, and selecting environments. Bar-On (2004) acknowledged cognitive intelligence as the ability to understand, learn, think rationally, recall, solve problems, and apply what was learned (Kaplan & Sadock in Bar-On). Mayer, Roberts, and Barsade (2008) view intelligence as a general descriptive term for a hierarchy of mental abilities.

*Social Intelligence*

First postulated by Thorndike (1920), social intelligence was described as one's ability to manage and understand other individuals and to interact wisely. Social intelligence was emphasized by Dewey as necessary for problem solving and conflict resolution (Murphy, 2006). Unlike Dewey, Thorndike viewed social intelligence as both behavioral and cognitive that provides the ability to understand individual personality and social behavior (Zirkel, 2000). From a social intelligence perspective, humans are reflective; thinking beings whose behavior is understood by their active engagement in the social environment and pursuit of important goals (Zirkel). As behaviors that help individuals understand themselves and their environment, individuals manage their

emotions and direct behaviors toward desired outcomes through social intelligence (Zirkel). Mayer and Salovey (2004) point out that research indicates that social intelligence may be difficult to define and measure but that social intelligence may still be a viable construct leading to a resurgence of research and literature in recent years.

Social intelligence provides a solid framework for researchers focusing on understanding the possibility of intelligence exceeding one's cognitive ability. Emotional intelligence theories encompass social intelligence constructs as theorists consider emotional intelligence as a form of social effectiveness touching both personality and social skills (Douglas, Frink, & Ferris, 2004). In a study of social effectiveness (the ability to know how and when to influence others) and conscientiousness among university management students, Douglas et al. found a positive relationship between emotional intelligence, conscientiousness, and performance ($r$ = .17). In line with Douglas et al.'s findings, Bar-On (2004) argued that to measure emotional intelligence is to measure one's common sense and ability to get along in the world.

*Gardner's Theory of Multiple intelligences*

Inspired by Piaget's work in cognitive development (Gardner, 1999, 2004) and the adaptability and functionality of individual behavior (Zirkel, 2000), Gardner's theory of multiple intelligences was the precursor to emotional intelligence. Intelligence is considered as "the ability to solve problems or fashion products that are of consequence in a particular cultural setting or community" (Gardner, 2004, p. 15). Formulating eight distinct intelligences, Gardner reasoned that individuals have multiple independent

abilities to think, respond, and act beyond their own cognitive ability that, at their core, each intelligence has a unique capacity for information-processing (p. 278).

Of the eight intelligences, Gardner (2004) identified personal intelligences as emotional recognition in oneself (intrapersonal) and in others (interpersonal) that helps guide behaviors. Gardner argues that humans possess several *relatively autonomous* (original emphasis) intellectual competencies or "frames of mind" (p. 8) that allow individuals to adapt behaviors within given environments and cultures. These personal intelligences expand on cognitive development and intellectual competence. Gardner embraced human intellectual competence within a problem-solving context, in that, he believed that these competencies enable an individual to find and resolve problems as a way to acquire new knowledge.

Gardner's (2004) personal intelligences paradigm holds dual significance in that the core capacity of this frame embodies both internal and external elements. For intrapersonal intelligence, an individual must access and identify emotions, then label, discriminate, and draw upon them as a means of understanding and guiding behavior. Likewise, interpersonal intelligence creates an ability to recognize and distinguish emotions in others to identify moods, motivations, and desires to decide on appropriate actions.

*Emotional Intelligence as Intelligence*

Salovey and Mayer (1990) first used the term emotional intelligence to distinguish intelligence apart from cognitive ability, which is used to appraise and regulate emotional information in oneself and others. Over recent years, the term has

evolved to encapsulate numerous terms and traits making it difficult to delineate as to what is or is not emotional intelligence (Mayer et al., 2008). Mayer (2001) referred to this time period as the "popularization" (p. 9) of emotional intelligence. Emerging research defined emotional intelligence along two distinct lines either as: 1) an intelligence involving emotion, or 2) a blended model of skills and characteristics used to engage in relationships (Mayer, p. 9).

*Models of Emotional Intelligence*

Three predominant models of emotional intelligence have emerged in recent years, ability-based (Mayer & Salovey, 2004; Mayer et al., 2008), emotional-social (Bar-On, 2004, 2006), and emotional competency (Goleman, 1997, 1998, 2001). Emotional intelligence literature distinguishes these models under two separate categories: ability-based and mixed-model approaches. Ability-based models focus on the interaction of emotion and intelligence considering emotions as mental processes (Mayer et al., 2004).

The mixed-model is based on the domain overlap of emotional intelligence, cognitive intelligence, and personality factors (Bar-On, 2006; Mayer et al., 2008). Mixed models adopt a more integrated, multifactoral approach studying multiple characteristics of emotions and personality simultaneously (Mayer, 2001). Researchers have separated ability-based models along pragmatic lines based on a set of interrelated abilities in contrast to a diverse mix of traits and dispositions adopted by mixed models (Mayer et al., 2008). Central to the ability-based model is the idea that emotional intelligence provides the capacity to reason and enhancement of thought with regard to emotions

(Mayer, 2001). Ability-based models segregate mental processes to isolate certain mental abilities such as motivation, persistence, and optimism.

Bar-On (2006) argued that all emotional intelligence models mix cognitive intelligence and personality factors and predictors, diminishing the dichotomy between ability and mixed models. However, existing research does not sufficiently support Bar-On's claim. Studies indicate that although both ability-based and mixed models overlap cognitive and personality domains, mixed-model measures tend to overlap personality domains extensively, whereas ability-based measures are more strongly linked to cognitive domains (Van Rooy, Viswesvaran, & Pluta, 2005).

*Bar-On Emotional-Social Intelligence (ESI) Model*

The Bar-On Emotional-Social Intelligence (ESI) model was founded on the theory that interrelated emotional and social competencies determine how individuals understand themselves and others and how they relate and cope with life's demands (Bar-On, p. 3). Bar-On (2000, 2006) expanded on his original model of emotional intelligence to emphasize the social aspects of understanding one's self and environment. The ESI is a multifactoral model that addresses the emotional, personal, and social dimensions of intelligence, considered more important for daily functioning than the cognitive aspects of intelligence (Bar-On, 2004).

Table 1 illustrates the ESI as a mixed-model comprised of a hierarchy of levels consisting of an emotional quotient (EQ) that includes five component scales, and 15 sub-scales describing specific characteristics of emotional and social intelligence (Bar-On, 2004).

Table 1

*Bar-On's Emotional-Social Intelligence Model.*

Emotional Quotient (EQ)

| *Intrapersonal* | *Interpersonal* | *Adaptability* | *Stress Management* | *General Mood* |
|---|---|---|---|---|
| • Self-regard<br>• Emotional Self-awareness<br>• Assertiveness<br>• Independence<br>• Self-Actualization | • Empathy<br>• Social Responsibility<br>• Interpersonal Relationship | • Reality Testing<br>• Flexibility<br>• Problem Solving | • Stress Tolerance<br>• Impulse Control | • Optimism<br>• Happiness |

*Note* From *EQ-I Bar-On emotional quotient inventory technical manual*. Toronto, Ontario: Multi-Health Systems, pp. 5-12.

Each component contains sub-scales that define individual competencies and skills

Each component contains sub-scales that define individual competencies and skills

required for individuals meet daily demands, challenges, and pressures (Bar-On, 2006). The description of the subscales defining scales of the emotional quotient reflect characteristics many theorists acknowledge as important to individual success in a variety of capacities to include academic (Jaeger, 2003), occupational (Bar-On, Brown, Kirkcaldy, & Thome, 2000), or workplace performance (Bar-On, 2006). According to Bar-On (2006), recognizing personal emotional and social intelligence allows individuals to:

> effectively manage personal, social, and environmental change by realistically and flexibly coping with the immediate situation, solving problems, and making decisions. To do this, we need to manage emotions so that they work for us and not against us, and we need to be sufficiently optimistic, positive, and self-motivated (p. 3).

ESI encompasses emotional, personal, and interpersonal abilities that interact and influence how an individual handles environmental demands (Bar-On, 2000). The ESI model establishes a foundation that helps individuals understand their emotions, as well those of others, to develop a level of emotional and social intelligence that dictates behaviors appropriate for the situations at hand. Bar-On (2004) was clear in stating that the ESI model relates to the *potential for performance* (original emphasis), not to performance itself. Armed with this knowledge, individuals can learn how to develop their levels of emotional and social intelligence to improve their opportunities for success in different aspects of their lives.

*Mayer-Salovey Four-Branch Mental Ability Model*

Mayer and Salovey (2004) believed that emotional intelligence could be operationalized and measured as a distinct form of intelligence, more so that social intelligence. Focusing on emotional intelligence as a mental ability, Mayer and Salovey created a Four-Branch Model of Emotional Intelligence. Figure 2 illustrates an integrative, ability-based framework, used in the Mayer and Salovey (2004) model divides emotional intelligence into four hierarchical areas of ability from bottom to top: (a) perceiving emotions, (b) emotional facilitating of thinking, 3) understanding and analyzing emotions/employing emotional knowledge, and 4) reflective management of emotions to enhance emotional and intellectual growth (Mayer & Salovey, 2004).

Mayer and Salovey (2004) based this model upon the notion that emotions are connected to relationships through information, in that when relationships changes so do emotions towards the relationship (Mayer, Salovey, Caruso, & Sitarenios, 2001). Each branch begins development in early childhood continually progressing in each area as the individual matures into adulthood (Mayer et al., 2008).

*Goleman Emotional Competency Inventory Model*

Similar to Bar-On, Goleman (1995) emphasized the non-cognitive, social aspect of emotional intelligence in the mixed-model Emotional Competence Inventory (ECI). Unlike the Mayer-Salovey and Bar-On models, Goleman's ECI focuses on the intelligence use of emotions in effectively managing self and others (Goleman, 2001; Boyatzis, Goleman, & Rhee, 2000). In contrast to Bar-On's ESI, the Goleman promotes the ECI model as a theory of performance to underscore emotional and social abilities (Goleman, 1998; 2001). The ECI provides a theoretical framework linking emotional intelligence to action and performance, evident in Goleman's definition of emotional competence as "a learned capability resulting in outstanding work performance" (Goleman, p. 27).

Goleman's ECI model (1995) has evolved in structure and conceptualization since its inception. Currently, the ECI establishes four clusters of emotional competencies within two domains: personal and social competence (Table 2) (Goleman, 2001). The model addresses 20 competencies falling within the four clusters based upon one's awareness and management abilities within each domain. Emotions shape that which one

perceives, thinks, and acts, and in turn, affect others (Goleman, 1998). Each cluster organizes competencies as behavioral groups in a parsimonious fashion, linked conceptually to describe associations with other competencies (Boyatzis et al., 2000). Each competency in the ECI relates to others in each cluster demonstrating individual effectiveness or development (Boyatzis et al.).

Table 2

*Goleman's Emotional Competency Model.*

| Personal | Social |
|---|---|
| Self-awareness**:**<br>• Emotional self-awareness<br>• Accurate self-assessment,<br>• Self-confidence | Social Awareness:<br>• Empathy<br>• Organizational awareness<br>• Service |
| Self-management**:**<br>• Emotional self-control<br>• transparency<br>• adaptability<br>• achievement<br>• initiative<br>• optimism | Relationship Management**:**<br>• Inspirational leadership<br>• Influence<br>• Developing others<br>• Change catalyst<br>• Building bonds<br>• Teamwork and collaboration |

*Note.* From *An EI-based theory of performance.* In C. Cherniss, & D. Goleman, (Eds.). *The emotionally intelligent workplace, pp. 27-44.*

*Emotional Intelligence Measurement tools*

Establishing emotional intelligence as a valid intelligence has been challenged by the inability to develop instruments that consistently measure the construct. Debates have ensued over which is the best instruments to measure emotional intelligence (Bar-On,

2008; Mayer et al., 2000b, 2008). Identifying a measure that produces valid and reliable assessments of a person's emotional intelligence has become difficult due to the excessive number of measures and the many different definitions applied to emotional intelligence (Mayer et al., 2008). Researchers do not agree as to whether emotional intelligence is an individual ability, non-cognitive skill, capability, or competence (Akerjordet & Severinsson, 2007). These discrepancies make selection of an emotional intelligence measure problematic. The content validity of the measure relates directly to the definition of emotional intelligence (Mayer, Caruso, & Salovey, 2000b).

MacCann et al. (2003) claimed that the popularized approaches to measuring emotional intelligence have created a "scientific backlash against itself" (p. 248). The numerous emotional intelligence instruments sacrifice empirical rigor to build acceptance of the more popular theories which may add value to selection and training processes for organizations but whose credibility has not been established through scientifically tested means (Davies, Stankov, & Roberts, 1998; MacCann et al., 2003). Such procedures make it difficult to select a measure that produces valid and reliable scores for what is considered an elusive construct (Davies et al., 1998).

Validating the constructs of emotional intelligence may be as challenging as validating those of general intelligence (Drago, 2004). Mayer et al. (2004) argued that emotional intelligence meets the three broad-based standards delineated for traditional intelligence that include: 1) a measure with operationalized test items with correct answers to measure ability, 2) specific patterns similar to but with a moderate correlation

to other intelligences, 3) development with age (p. 200). Yet researchers continue to debate whether emotional intelligence is an independent intelligence or a component of personality, (Akerjordet & Severinsson, 2007; Mayer, Caruso, & Salovey, 2000; Schulte, Ree, & Carretta, 2005) or even an intelligence at all (Roberts et al., 2001). Adding to the confusion are the numerous definitions of emotional intelligence and descriptions of models encompassing the characteristics of the construct. Regardless of the definitions and descriptions, emotional intelligence theorists maintain that emotional intelligence influences individual thinking, behaviors, and performance in ways that intellectual intelligence (IQ) cannot (Bar-On, 2004; Goleman, 1997; Salovey & Mayer, 1990).

Despite the argument and confusion, self-report and ability-based assessments have emerged as the most common models used to measure emotional intelligence (Davies et al., 1998; Mayer et al., 2000b; MacCann et al., 2003). Self-report assessments, such as the Bar-On (2004) EQ-I or Goleman's (2001) *ECI*, measure trait characteristics of emotional intelligence consistent with the mixed model frameworks. Although both types of measures empirically measure emotional intelligence under a variety of situations, findings are inconsistent demonstrating that validity and reliability issues plague both models (Davies et al., 1998; Petrides & Furnham, 2001; Van Rooy et al., 2005). Ability models, such as the *MEIS* and *MSCEIT*, are objective performance-based assessments (Mayer et al., 2000b). The Multifactor Emotional Intelligence Scale (MEIS), a 12-subscale ability test, and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), contain scales designed to measure the four branches of emotional intelligence (Davies et al., 1998; Mayer et al., 2000b; Mayer et al., 2004).

*Psychometric properties of Self-report emotional intelligence measures*

Self-report measures provide a convenient, efficient, and flexible method for data collection (Babbie, 2001). Self-report instruments are the most predominant data collection method for emotional intelligence (Bar-On, 2000; Millet, 2007). Conversely, only two self-report instruments have been developed to measure reflective thinking (Kember et al., 2000; Wittenburg, 2000).

The measurement accuracy of emotional intelligence measures depends on both reliability and validity (MacCann et al., 2003). Researchers have argued the psychometric deficiency of emotional intelligence measures primarily due to a lack of consistency in definition for emotional intelligence constructs. Additional deficiencies may rest with a self-report format and a lack of discriminant validity due to the overlap of emotional intelligence measures with personality measures (Daus & Ashkannasy, 2005).

For purposes of this study using Bar-On's (2002) EQ-i self-report, mixed-model approach, convergent and discriminant validity and predictive validity of the scores become significant to the usefulness of the research findings. MacCann et al. (2003) reported that self-report emotional intelligence measures, specifically the EQ-i, most likely combine a variety of constructs. A consistent criticism of self-report measures, such as the EQ-i, is that the dispositional variables used are comparable to personality traits whereby making it difficult to discriminate between those traits that are truly emotional intelligence and those which are personality (MacCann et al, 2003; Mayer, Caruso, & Salovey, 2000b; Petrides & Furham, 2001).

Derksen, Kramer, and Katzko (2002) conducted a study using separate self-report/perceived success or ability measures to correlate results of the EQ-i. Derksen et al. argued the difficulty to construct psychometric predictors of either general or specific success because success rests not only on IQ but other individual factors that influence a person's life. Salovey and Mayer (1990) and Bar-On (2004) identified six components of emotional intelligence: emotional self-awareness, assertiveness, empathy, interpersonal relationships, stress tolerance, and impulse control. Dawda and Hart (2002) also confirmed the reliability and validity of EQ-i scores and its ability to measure factors other than cognitive intelligence. Derksen et al. (2005) replicated the study results as reported by Bar-On (2004) thereby presenting evidence of the EQ-i as a viable measure of emotional intelligence. The psychometric properties for each individual instrument will be discussed in Chapter 3.

*Bar-On's Emotional Quotient Inventory (EQ-i)*

Bar-On developed the first self-report measure of emotional and social intelligent behavior (Bar-On, 2000, 2004) for the ESI model. The Emotional Quotient Inventory (EQ-i) measures emotional and social intelligence through self-report procedures designed to assess perceptions about an individual's competencies in specific domains (Salovey, Woolery, & Mayer, 2001; Zeidner, Matthews, & Roberts, 2004). The EQ-i describes key aspects of emotional-social intelligence rather than cognitive intelligence or personality constructs (Bar-On, 2006). The ESI model provides the theoretical framework for Bar-On's EQ-i designed to assess the characteristics of emotional intelligence (Bar-On, 2004, 2006). Bar-on (2006) refutes the assertions of other researchers that the EQ-i

measures more than emotional qualities to include personality traits. Studies support the construct validity of the EQ-i scores, validating that the EQ-i measures what it was designed to measure (Bar-On). Dawda and Hart (2000) suggested that the EQ-i could measure a broad range of EI constructs based on correlations among composite scales and convergent and discriminant validities.

The dimensions examined by the EQ-i are critical to workplace performance to include interpersonal, intrapersonal, stress management, and adaptability (Bar-On, 2004). Moreover, in terms of NATs, the EQ-i dimensions best relate to the six suitability dimensions used to assess their performance. The EQ-i has been shown to be predictive of occupational success (Bar-On, 2004), alcohol abuse (Brackett & Mayer, 2003), conscientiousness (Douglas et al., 2004), and emotional expressiveness and the potential for performance (Bar-On et al., 2000), thereby apt for use in this study.

*Predictive Value of Emotional Intelligence*

Researchers cannot agree as to the predictive ability of emotional intelligence in terms of success. Success has been operationalized as the outcome of that which an individual strives to achieve or accomplish (Bar-On, 2004, p.15). This definition is highly subjective and potentially affected by social influences (Bar-On, 2004), which may contribute to the difficulty in confirming the predictive ability of emotional intelligence.

Assertions of the predictive validity of emotional intelligence increased noticeably with Goleman's (1995) popularization of the concept (Mayer, 2001). But emerging research supporting these claims that emotional intelligence is more important than cognitive intelligence (IQ) (Goleman, 1998) has not consistently supported these

declarations. Studies on the predictive value of emotional intelligence have not produced consistent findings (MacCann et al., 2003; Zeidner et al., 2004). In general terms of overall performance, emotional intelligence research suggests a correlation between an individual's emotional intelligence capacity and their level of performance. Individuals who exhibit high levels of emotional intelligence tend to be more successful performers than those with lower capacities for emotional intelligence (Goleman, 1995; Gundlach, Martinko, & Douglas, 2003; Schutte, Malouff, Hall, Haggerty, Cooper, & et al., 1998).

Van der Zee, Thijs, and Schakel (2002) found the emotional intelligence dimensions predicted academic and social success above traditional indicators. Likewise, Douglas et al. (2004) found emotional intelligence to have predictive ability relative to conscientiousness and performance. Barchard (2003) did not find emotional intelligence to be predictive of academic success when examining the incremental validity of emotional intelligence, cognitive, and personality domains. Yet, a meta-analysis of current research findings suggests that emotional intelligence may be a better predictor of performance than personality (Van Rooy & Viswesvaran, 2004). After examining 69 independent studies to determine the relationship between emotional intelligence and performance outcomes, Van Rooy and Viswesvaran found that emotional intelligence had an overall predictive ability across all performance domains suggesting that emotional intelligence may be a better predictor of performance than personality or cognitive ability.

*Emotional Intelligence and Reflective thinking*

Learning cannot occur without engaging the affective domain (Dewey, 1933). An individual's ability to learn exceeds the cognitive level, as Dewey explained:

> There is no integration of character and mind unless there is fusion of the intellectual and the emotional, of meaning and value, of fact and imaginative running beyond fact into the realm of desired possibilities. (Dewey, 1933, p. 278)

Emotions and attitudes frame how individual's cognitively process their experiences and make meaning, thereby, intricately tying the reflective learning process to the level of how one feels. Emotional intelligence and cognition are not mutually exclusive and may even co-exist (Petrides & Furnham, 2001). Until recently, many theorists considered reflection as strictly a cognitive process (Merriam & Clark, 2006). Moon (1999) indicated that the relationship between reflection and emotions is one that is acknowledged but undefined. Emotions are considered to be a part of the reflective process, influencing to how one reflects and its outcome (Boud et al., 1985; Moon, 1999). Bar-On (2004) alludes to a relationship between both constructs. Likewise, Goleman (1995) suggests that emotional competencies develop through experiential learning and habitual self-reflection suggesting that reflective thought influences one's emotional intelligence. Neither Bar-On nor Goleman has offered empirical evidence for their assertions. As such, a gap still exists in literature studying the implications of reflective thinking on performance that include consideration of the emotional aspects of learning.

*Emotional Intelligence and Law Enforcement Culture*

Research has shown that emotional intelligence aids in the development and integration of a professional identity based on different areas of knowledge (Akerjordet &

Severinsson, 2007). Occupational culture determines rules that govern behavior. The culture also identifies circumstances that define performance success or failure (Bar-On et al., 2000). A positive relationship exists between emotional intelligence and job performance for those professions that require greater identification and management of one's own and other's emotions, such as law enforcement (Daus, & Ashkanasy, 2005). Bar-On et al. examined emotional intelligence and law enforcement officers and rejected the notion of a "police personality" (p.1115). They suggest that occupational culture and public demand may influence individual officer behaviors and emotional expressiveness. Officers must comply with cultural expectations or risk diminished effectiveness (Callan, as cited in Bar-On et al. 2000).

Burnette (2006), Millet (2007), and Ricca (2003) conducted some of the few studies using the EQ-i to study the implications of emotional intelligence among law enforcement officers. Only Ricca's study determined a positive relationship between emotional intelligence and burnout among officers ($r = .40$, $p < .01$). Neither Burnette nor Millet found a significant correlation between emotional intelligence and leadership influence (Burnette) or job satisfaction (Millet), suggesting that further study of the relationship of emotional intelligence and aspects of law enforcement are necessary.

Just as the role of emotions is minimized in most law enforcement training (Saville, 2006), so is the number of studies of emotional intelligence on law enforcement training cohorts limited. No studies exist relating to police academy trainees and the predictive value of emotional intelligence in their training performance. Organizational culture influences how individuals develop emotional intelligence within the context of

their work environment. Law enforcement training helps socialize individuals to the organizational culture by defining acceptable emotional responses. In a 2006 study, Singh examined the role of emotional intelligence in organizational learning. Singh attempted to determine the influence of employees with high emotional intelligence assuming that organizational learning seeks to promote individual innovation and flexibility to allow for greater proactive problem solving and decision-making. Singh found a significant positive relationship between emotional intelligence and organizational learning. Such findings contribute to the importance of understanding how this construct is related to the success of FBI NATs in the learning environment.

## Performance

Research in predicting performance in law enforcement training is limited. In existing studies, academic scores primarily delineated performance measures of success. Chappell (2008) evaluated 300 recruits in a Florida police-training academy to determine predictive factors of academy performance under two separate curricula, the traditional model and the pilot test of a new community-based policing model. Performance was defined as the average academy scores, failure experience, and likelihood of future employment by a law enforcement agency. Unlike the FBI NATs in this study, the subjects in Chappell's study were not employees of one specific agency but rather individuals who were completing their training prior to acquiring employment with a law enforcement agency. Overall, academic scores were categorized on a numeric grades on a 100% scale with 80% or less designated as the lowest grade category. The recruit's employment potential characterized the second factor of success.

Results indicated that certain "types" (p. 46) of recruits perform differently in both curricula. Considering only the analysis performance scores, recruits in the traditional curriculum (*n* = 155), Chappell found that race, age, military experience, special position (class ranking or recognition status), and academy scores were significant predictors of performance for police trainees. For the community-based policing recruits (*n* = 145), significant predictors were academy scores, race, education, and special position. Although no clear patterns emerged from the data, two factors showed significance as performance measures. Race was significant in both models, in that whites attained higher scores than non-whites. Special position showed predictive significance indicating a motivation to succeed.

*360$^{o}$ Perceived Ability Assessments*

This study used two collection methods to determine performance. A 360$^{o}$ Perceived Ability Questionnaire, created for this study, will collect data regarding students' perceived ability through a self-report assessment. These scores were used to represent an alternative performance variable to the observed performance scores obtained through Practical Application Unit (PAU) Performance Assessment in which instructors rate individual performance in problem-based exercises. The use of these measures helped to correlate the use of reflective thinking and presence of emotional intelligence to NAT performance. These procedures measure performance by collecting observed and perceived performance feedback about and from individuals (Liu, Lin, & Yuan, 2002; Bass, B., 1999). Several emotional intelligence measures use a multi-rate assessment approach to measure levels of emotional intelligence (Bar-On, 2004;

Goleman, 1998; Mayer et al., 2000b). Studies assessing the use of a 360-degree or multi-rater feedback approach to performance are plentiful in existing management, education, and organizational literature (Beehr, Ivanitskaya, Hansen, Erofeev, & Gudanowski, 2001; Fletcher, Baldry, & Cunningham-Snell, 1998).

Researchers have debated the effectiveness of using multi-rater assessments as predictors of performance, selection (Atkins, & Wood, 2002; Beehr, et al., 2001), or employee development (Garavan, Morley, & Flynn, 1997). Although researchers have suggested some utility in using these 360-degree measures, they have also cautioned how the results are applied to performance or selection decisions (Atkins & Wood; Fletcher et al.; Garavan et al.). Atkins and Wood caution that, although self-assessments can provide insight into one's performance, these reports should not be construed as reflective of actual performance competency.

It should be noted that the measures for NAT performance proposed for this research do not fit the 360-degree, multi-rater models as described in the literature. Most multi-rater measures include peer-reviews as part of the comprehensive package of performance review. This study will only consider instructor-observed performance and student-perceived performance scores. A discussion of these types of measures is warranted for this predictive study, as comparable performance measures are not adequately addressed in existing self-assessment and performance literature.

*Self-Assessing Performance*

Because the NAT participants will be asked to self-assess their PAU performance in a self-report questionnaire, a discussion of the relevance of self-assessed performance

scores as compared to instructor observed performance scores in this study is warranted. For purposes of this study, an exhaustive search for comparable research resulted in similar, but unrelated, studies of student self-assessment or perceived ability. Existing research focused primarily on determining the success of self-assessments based on the agreement between instructor and student assessments of student performance (Cassidy, 2007; Falchikov & Boud, 1989; Miller, 2001).

The ability of students, especially inexperienced students, to assess their own performance has been in question for years. Cassidy (2007) asserted that taking responsibility for one's own learning and performance establishes how students assess their performance. In a comparative analysis of self-report measures of the students and professors assessments, Cassidy found no statistical difference between student and instructor assessments scores and that they were positively correlated. Phan (2007a) argued that constructive alignment between learning and assessing performance outcomes are relevant to the study of reflective thinking. When compared to instructor assessment scores, students have the capacity to rate their own performance (Falchikov & Boud, 1989) regardless of their experience level but tend to underestimate their performance, when compared to ratings by instructors (Cassidy; Falchikov, & Boud; Miller, 2001). Miller (2001) noted that agreement between self and faculty assessments of student performance commonly are incongruent. Consistent research findings show that students who demonstrate higher capabilities tend to underestimate their ability; whereas, less able students tended to overestimate their abilities when compared to

instructor scores (Falchikov & Boud; Langendyk, 2006; Picciano, 2002; Randall, Ferguson, & Patterson, 2000).

In one study, Falchikov and Boud (1989) looked at the absolute measures (the difference between students' estimated ratings and the instructor's scores of student performance) of the students' ability to self-assess. The meta-analysis indicated a close association ($r = .252$, $p < .025$) exists between instructor and student ratings of the studies analyzed. Using the mean difference between student self-assessed and actual instructor scores, Falchikov and Boud found no significance ($t = - 0.93$, $df = 206$, 2-tailed, $p < .05$) between the scores. However, both scores were found to be positively correlated ($r = 0.252$, $df = 82$, 2-tailed, $p>0.025$). Picciano (2002) compared the mean scores for both students and instructors finding a positive (.5756) and statistically significant correlation between actual and perceived performance.

For this study, neither NAT self-assessment ability nor agreement between student-instructor scores was criteria for determining performance. In fact, variance in performance scores was more critical than agreement as more variance between scores was needed for this study. This need dictated the necessity for collecting the $360^{o}$ Perceived Ability scores with the PAU Observed Performance Assessment scores. Self-assessed student scores were included to define the criterion variable contributing to greater variance in determining the relationship of reflective thinking and emotional intelligence to performance.

## Summary

This chapter provided a comprehensive literature review of the theoretical frameworks and current research supporting reflective thinking, emotional intelligence, and performance. The chapter also presented a discussion of the FBI's New Agent Training program and similar law enforcement training to provide a complete context of a law enforcement-learning environment. The chapter included a discussion of measurement instruments for reflective thinking, emotional intelligence, and self-assessment used in current research.

The next chapter presents the quantitative research design structured to determine the correlation between reflective thinking, emotional intelligence, and performance of FBI NATs, measured through the QRT and EQ-i. Chapter 3 describes the methodology, instrumentation, research setting, study population, and sample used in this study. The next chapter also discusses the pilot study conducted and the results of the pilot study that support the research design in this proposal.

# CHAPTER 3: RESEARCH METHOD

## Introduction

This study used correlational research to investigate the predictive relationship of reflective thinking and emotional intelligence on the performance of FBI NATs during problem-based learning practical exercises. This chapter describes the research design, the research approach, data collection methodology, and data analysis, the setting and sample selection, instrumentation, data collection techniques, and data analysis processes, and protection of participant's rights for this study. It concludes with a discussion of the pilot study that was conducted to examine the research procedures and to pretest the selected instruments.

## Research Design and Approach

This quantitative study used a nonexperimental, correlational research design. Consistent with quantitative research design (Creswell, 2007), this study tested null and alternative hypotheses to determine the predictive value of reflective thinking and emotional intelligence to the performance of the NATs in the problem-based learning exercises.

Other possible research designs were considered but not selected. Reflective thinking measures are grounded, predominantly, in qualitative designs, whereas emotional intelligence instruments are primarily quantitative. A mixed-model approach (quantitative and qualitative) was considered but rejected due to the complexity of such studies and time constraints.

A validated quantitative measure of reflective thinking exists that is compatible with existing emotional intelligence measures. As such, a comprehensive quantitative design would provide empirical data not only about reflective thinking not found in other studies, but also related specifically to both constructs. Additionally, a quantitative approach produced data that better generalized to other similar populations. For these reasons, a quantitative research design was selected to study these constructs within the study population.

Several other considerations lead to the selection of a quantitative design. First, a quantitative research design measuring the independent variables of reflective thinking and emotional intelligence provided noteworthy descriptions of the relationships of each construct to the dependent variable of performance. A quantitative design reduces ambiguity, thus allowing for the interpretation of data based upon specific variables and factors (Creswell, 2007). Although a quantitative study may lose richness of meaning in explaining events when compared to a qualitative design (Babbie, 2001), quantitative correlational research provided direct evidence of relationships, relative to the study population, and provided more meaningful results that are generalizable to the NAT population. For these reasons, a quantitative research design was selected to study these constructs within the study population.

Because reflective thinking and emotional intelligence are qualities that NATs developed prior to entering training, the levels of these independent variables cannot be manipulated in order to test causation. Hence, a nonexperimental design allowed the researcher to study nonmanipulated variables through highly descriptive research

methods (Johnson, 2001). Specific to this study, correlational research did not require the manipulation of variables to test affect, in contrast to experimental research (Cohen, Manion, & Morrison, 2000). For this study, measures of association were used to determine the degree of relationship between the variables (Vogt, 1999). A correlational study provided useful data about the relationship of the NATs' levels of reflective thinking and emotional intelligence to their performance in problem-based exercises.

Although correlation does not necessarily imply causation, many factors exist that might have a causal relationship to performance. This study identified variables that drew accurate conclusions about the value of the dependent variable (Lewis-Beck, 1980). A nonexperimental correlational study design collected meaningful data by focusing on specific variables to determine if either (or both) independent variables led to predicted performance behaviors (Cohen et al., 2000). Whereas, correlation cannot prove causality, correlational research allowed for the interpretation of the strength or statistical significance of the relationships in question.

Quantitative research design was well suited to survey research used in this study. According to Babbie (2001), surveys offer the best method to collect data on large populations. Self-report survey data collected in this study was used in a correlational study to determine if a predictive relationship exists between either reflective thinking or emotional intelligence and performance then determine the direction and magnitude of the relationships (Cohen et al., 2000). Self-report survey research is optimal for populations, such as the NATs, too large to observe, thereby making large samples more practical (Babbie, 2001). Lastly, although quantitative studies are plentiful in emotional

intelligence, quantitative research on reflective thinking is sparse. A quantitative approach was selected for this study, as quantitative research studying both constructs together is non-existent.

This quantitative study focused on the predictive value of reflective thinking and emotional intelligence on the performance of the FBI NATs in their Practical Applications exercises. Using four separate instruments, data was collected to measure reflective thinking, emotional intelligence, perceived ability, and actual observed performance ratings of New Agent participants. This data determined the existence of a moderate relationship between reflective thinking and emotional intelligence (independent variables) exists with the NAT performance scores (dependent variable) in the problem-based learning exercises as part of their basic SA training at the FBI Academy.

## Setting and Sample

This study was implemented at the FBI Academy, located on the Quantico Marine Corp Base, Quantico, Virginia. The 20-week FBI New Agent Training Program is held at the FBI Academy campus (as described in chapter 1) which houses the main training facilities to include Hogan's Alley, where the Practical Applications problem-based exercises are conducted.

## Population

FBI NATs are rarely studied as compared to other law enforcement training populations. FBI SAs are distinct from most other federal, state, and local law enforcement officers in large part, due to the types of enforcement and intelligence

responsibilities bestowed upon the agency. Additionally, the required pre-employment qualifications for FBI SA applicants exceed most other agencies (Koletar, 2006) thereby attracting an older, more educated candidate than other law enforcement agencies. While akin in some respects to other law enforcement agencies, FBI New Agents and the New Agent Training environment are unique to the organization. Even though this research may be generalized to other law enforcement population, the results of this study hold greater relevance to the FBI New Agent population. The primary goal of this study was not to generalize to all law enforcement, but rather apply to the population of NATs exclusive to the FBI who will become SAs of the future.

The FBI employs a competitive screening and selection process for individuals selected for the position of FBI Special Agent. Qualified candidates must be at least 23 years old and no older than 37 years, hold an undergraduate degree from an accredited university, and have at least 3 years full time work experience or hold a graduate-level degree and at least one-year full-time work experience. All applicants must be in good health and physical condition, pass a polygraph examination, physical fitness test, and comprehensive background investigation to receive a top-secret security clearance. Candidates who successfully complete all phases of the application process are placed in a candidate pool for assignment to a New Agents Training class. From the candidate pool, the FBI Human Resources Division (HRD) assigns selected candidates to New Agents Training classes based on the completion of pre-employment tests, screenings, and security background investigations.

This research studied classes of NATs attending training at the FBI Academy. Approximately 1,000 candidates attend New Agent Training each year to complete the mandated training before reporting to their field office assignments. The cohorts to be examined consisted of 20 New Agents classes of 50 New Agents Trainees reporting every two weeks to complete the 20-week training program. Because all NATs complete the same application and selection process and have comparable qualifications, the NAT cohorts will be viewed as similar in nature, with individuals randomly distributed within the various sections.

Although New Agent candidates come from diverse backgrounds and experiences, the rigorous testing and competitive selection procedures are designed to identify those individuals who embody the characteristics of an FBI SA (J. Hurd, FBI Organizational Industrial Psychologist, personal communication, May 25, 2009). Each NAT was selected after meeting the established qualifications and completing the selection process. Assignment to a New Agents Training class was random based upon openings in each class and availability of the candidate. Nothing obtained in this study indicated that one New Agents Training class differed from the next class. Therefore, the make-up of each individual New Agent Training class was similar, allowing for generalization of the results of this study back to all FBI NATs.

This study used a sampling frame of approximately 600 NATs in residence, participating in the New Agents Training Program. Calculating the required sample size depends on several factors, which include the desired statistical power, alpha level, expected effect size, and number of predictive variables (Tabachnick & Fidel, 2001).

Tabachnick and Fidel provided the two equations to calculate the minimum sample size. The first equation tests for multiple correlations to achieve a statistical power of .80 with a medium effect size α = .50 for a medium sized relationship between the independent and dependent variables: ($N \geq 50 + 8m$). The second equation tests individual predictors: ($N \geq 104 + m$). For both calculations, $N$ = the sample size and $m$ = number of independent variables. To determine the required minimum sample size, Tabachnick and Fidel recommend calculating $N$ using both equations then selecting the larger numbers. For this study, the calculations are as follows: $N \geq 50 + 8(2)$ where $N \geq 66$ and $N \geq 104 + 2$ where $N \geq 106$.

Based upon the calculations using the formulas above, a sample size of 106 would be sufficient for purposes of this study and the study population; but, a larger sample size would provide a higher statistical power. Using these same calculations with the same acceptable power levels (error (α) = .05, power (1-β) = .95, effect size = .15) the G*Power 3 calculator (Faul, Erdfelder, Lang & Buchner, 2007) recommended a minimum sample size of 170 to achieve the desired statistical power. As a larger sample size will provide higher statistical power, this study will use a study sample of approximately 170 NATs. The expectation was that a sample of this size can achieve greater statistical power and could be collected within a reasonable time period from the number of New Agents classes scheduled. The researcher continued to sample the cohort of New Agents classes until an adequate study sample size of 170 NATs was obtained.

Participants in this study met the following criteria for consistency in data collection and the representation of the NAT population:

1. Assigned to a New Agents Training class in the FBI New Agents Training Program beginning in calendar 2009;
2. Participating in the New Agents Training class after week 15 of the New Agents Training schedule;
3. Completed all exercises for the Practical Applications Unit (PAU) New Agents Training curriculum; and
4. Evaluated in all 13 practical applications exercises under the primary instructor assigned to that New Agents class.

## Sampling Measures

Initially, this study appeared to use a convenience sampling design because the entire study population is located at the FBI Academy. Rather, the strategy for this study resembled self-selecting, volunteer sampling (Babbie, 2001). NATs did not volunteer for the initial contact, indicative of a true volunteer sample. For this study, participants expressly requested a consent form indicating their desire to take part in the study. Volunteer sampling became relevant to this study as it affected the follow-through and completion of the study instruments. Volunteer sampling can be problematic in that this approach may draw participants who are untypical of the overall population (Muijs, 2004). Because the NATs were aware of the nature of the study, those trainees who may think reflectively and have high levels of emotional intelligence may have been predisposed to participate. Volunteer sampling made it equally difficult to ensure adequate representation of minorities and women in the final study sample. While bias is a potential problem based upon the sampling design, nothing exists to suggest these

biases will occur. Should an indication of self-selection bias become apparent, tools designed to address bias would be used during data analysis to correct for the bias.

## Instrumentation

The hypothesized model for this study was designed around three constructs that include reflective thinking, emotional intelligence, and performance. Discussed in more detail below, two self-report standardized instruments were used to measure the independent variables. The Questionnaire for Reflective Thinking (Kember et al., 2000) measured levels of reflective thinking. The Emotional Quotient Inventory (Bar-On, 2004) measured levels of emotional intelligence. The dependent variable of performance was measured through the collection of two separate scores. Practical Applications Performance Assessment scores for each NAT measured the instructor-observed performance of the NAT in the problem-based exercises. The 360$^{o}$ Perceived Ability Questionnaire gathered demographic data and measured how the NATs perceived their ability along the same dimensions, as rated by the instructors, for the same problem-based exercises.

### *Bar-On Emotional Quotient Inventory (EQ-i: 125)*

The Bar-On EQ-i 125 (Appendix C) measured emotionally and socially competent behavior through a self-report instrument (Bar-On, 2000). Specifically, the EQ-i: 125 was designed to measure an individual's emotional responses in five composite scales of intrapersonal, interpersonal, adaptability, stress management, and general mood. Within the five composite scales are 15 subscales that measured factorial components necessary for coping with one's environment (Bar-On, 2004). Respondents rated each

item on the EQ-i:125 on a five-point Likert scale response design. Response alternatives ranged from (a) very seldom or not true of me, (b) seldom true of me, (c) sometimes true of me, (d) often true of me, and (e) very often true of me or true of me (Bar-On, 2004).

Of note, the EQ-i:125 has a built-in correction factor to adjust scale scores based on validity indices (Positive Impression and Negative Impression). This feature of the EQ-i:125 reduced the potential for distorting effects of response bias, such as faking good (Breakwell, Hammond, Fife-Schaw, & Smith, 2006; MacCann et al., 2003), indicative of most self-report instruments (Bar-on, 2006). Four validity indicators and a correction factor adjusted scale scores to account for inconsistent or omitted responses that can skew or exaggerate results (Bar-On, 2000). The EQ-i: 125 took approximately 25-35 minutes to complete.

Responses for the EQ-i:125 were scored automatically through the Multi-Health Systems Incorporated (MHS) website. Data sets provided upon request included calculated raw score responses that were converted to standard scores for an overall emotional quotient score (EQ). The EQ was computed from the conversion of the raw scores of 15 subscales based on the factorial components of emotional intelligence (Bar-On, 2004). Higher EQ scores may be indicative of a more positive prediction of general success. Lower scores may indicate a difficulty meeting environmental demands. The scores and sub-scores included total the Emotional Quotient, and another 15 subscale scores of self-awareness, self-regard, self-actualization, independence, empathy, relationships, social responsibility, problem solving, reality testing, flexibility, stress

tolerance, impulse control, happiness and optimism. Only the overall EQ score was used in the analysis of this study.

*Psychometric Properties*

The EQ-i is the oldest measure for emotional intelligence (Gowing, 2001; Bar-On, 2004), and the reliability and validity of EQ-i scores have been tested extensively (Bar-On, 2004; Derksen et al., 2002; Douglas et al., 2004; Petrides, & Furnham, 2001). Convergent and discriminant validity, content and construct validity have been supported, as well (Bar-On, 2004; Dawda & Hart, 2000). Gowing, 2001; Brackett & Mayer, 2003). On the other hand, in a comparative analysis of existing research, Conte (2005) found that, although demonstrated adequate reliability, the EQ-i lacks evidence of discriminant validity.

Bar-On (2004, 2006) reports normative data for internal consistency coefficients (Cronbach alpha) for scores from the EQ-i subscales on seven population samples ranging from .69 - .86 with an average internal consistency coefficient of .76. Retest reliability of the EQ-i was reported to be adequate with scores after one month at .85 and four months at .75 (Bar-On). In a meta-analysis of research examining emotional intelligence measures, MacCann et al. (2003) suggest that the majority of Cronbach alpha scores collected through different researchers are higher than .80 indicating that overall EQ-i reliability is sound but that individual subscale scores ranging from .54 - .79 may be less reliable. Based on Cronbach alpha values, Dawda and Hart (2000) argued that internal consistency of Total EQ score with the five composite scores is “excellent” (p. 805). All five composite scales ranged from .67 - .93 indicating a high correlation with

the Total EQ score suggesting that the Total EQ score may offer a good index of emotional intelligence (Dawda & Hart). Predictive ability of the EQ-i was established through studies where published reliability coefficients are within acceptable ranges confirm the internal consistency of Bar-On's EQ-i (Brackett and Mayer, 2004; Dawda & Hart, 2000; Gowing, 2001; Van der Zee et al., 2002).

*Questionnaire for Reflective Thinking (QRT)*

Based on Mezirow's (1991) Transformational Learning theory, the QRT (Kember et al., 2000) is a self-reporting, online survey measuring levels of individuals' reflective thinking ability: habitual action, understanding, reflection, critical reflection. The QRT (Appendix B) measured the perceived ability for reflective thinking of each individual in the sample population. Items measured the extent to which learners perceive that they engage in the four types of reflective thinking: habitual action, understanding, reflection, and critical reflection. Each level of the QRT is progressive and cumulative, building each subsequent question on knowledge and reflective thinking practice. The instrument contains 16 items, scoring responses on a five-point Likert scale: 1 – *definitely disagree*; 2 – *disagree*; 3 – *unsure*; 4 – *agree*; 5 - *definitely agree*. Participants completed the QRT in approximately 10 minutes.

Kember et al. (2000) designed the QRT for use in academic learning environments. To ensure a more accurate response for this study, some questions in the original QRT were modified, slightly, from their original form to fit the context of the New Agents Training Program and an organizational learning environment. In an

electronic communication dated April 6, 2009, David Kember, the original author of the QRT, authorized me to use the instrument as necessary for this research.

The only modifications made to the overall QRT were replacement of the words "course" and "lecturer" with the words "New Agents Training Program" and "instructor," respectively. The overall intent of the modified questions remained in tact. For example, in the original QRT, question number two states, "This course requires me to understand the concepts taught by the lecturer" (Kember et al., 2000, p. 395). For this study, question two read as, "The New Agents Training Program requires me to understand the concepts taught by instructors." The modified questions in the QRT are 2, 4, 5, 6, 8, 12, 13, 14, and 16.(See Appendix A for Kember et al.'s original QRT and the modified QRT).

According to Rivers, Meade, and Fuller (2009), context effects can influence responses to the point where failure to consider these effects can lead to false conclusions of research findings. Context effects include modifications to question form, wording, or response categories and options (Rivers et al.). Nonetheless, changes to existing instruments may affect survey reliability and content validity. Such modifications were necessary for this study to address context effects relevant to the environment under which the study was conducted. These modifications enhanced construct validity by adding to the consistency of the measure for the context of the environment of the study and sample population. These slight changes improved the content validity as the questions applied directly to the context of the New Agents training program as opposed to that of an unrelated higher education academic course as originally designed.

*Psychometric Properties*

Using confirmatory factor analysis, Kember et al. (2000) established the psychometric properties and the goodness of fit of scores from the QRT. The values of a four-factor model ($X^2$ = 179.3, *df* = 100, and CFI = 0.903) deemed the questionnaire scales acceptable indicators of the constructs. Cronbach alpha values for each subscale: habitual action (.62), understanding (.75), reflection (.63), and critical reflection (.67) were within acceptable levels of reliability. Leung and Kember (2003) found modest but acceptable alpha values ranging from .58 to.74 for each subscale. Phan (2006, 2007a, 2007b) and Lucas and Tan (2006) reported similar reliability estimates to the values described by Kember et al., in their respective studies, thereby confirming the internal consistency of the scores produced by this instrument.

*Practical Application Performance Assessments*

The Practical Application faculty assess the NATs' performance through the real-life, practical exercises. The Practical Application Performance Assessment (FBI, 2008) ratings were based on instructor observations of individual NAT behaviors in 13 separate practical scenarios (Table 3). Each practical exercise increased in complexity and difficulty as the week's progress requiring the NATs to apply learning from a variety of content areas within their training.

The Practical Applications instructors rated the *observed negative* behavior of the individual trainee during a practical exercise on any of the ten performance dimensions. Due to the complexity of the practical exercises, the number of available instructors, and

the number of NATs involved in a single exercise, some trainees were placed in higher profile positions than others, thereby drawing the attention of the rating instructor.

Table 3

*Practical Application Performance Assessment Dimensions*

| Performance Dimensions | Descriptions |
|---|---|
| Firearms handling and deadly force | Demonstrates appropriate handling of firearms and adherence to the FBI's Deadly Force Policy; |
| Safe vehicle operation, good intelligence | Demonstrates safe vehicle handling and operation; |
| Good Intelligence | Demonstrates sound techniques to collect intelligence relevant to the situation; |
| Good planning | Demonstrates solid planning practices for operational situations; |
| Superiority of personnel and firepower | Demonstrates acceptable practices engaging the amount of personnel and firepower to conclude the situation, successfully; |
| Cover and concealment | Demonstrates sound practice by identifying and utilizing cover and concealment for the given situation; |
| Clear communications | Demonstrates clear and concise communications with others appropriate to the situation; |
| Control of self, subjects, and environment | Demonstrates consistent behavior and appropriate demeanor by enacting physical, verbal, and visual control in a given situation; |

| | |
|---|---|
| Continual assessment of the situation and adaptability | Demonstrates the ability to assess a given situation and adapt a course of action as warranted; |
| Tactical judgment | Demonstrates appropriate decision-making abilities and use of tactical procedures in a given situation. |

*Note*. From *Practical Applications Unit New Agents Training Instructors Manual (IPAT)"*, by the Federal Bureau of Investigation, 2008, pp. 1-4.

New Agents Trainees were scored by the Practical Applications instructors in one of three ratings (Table 4) for each performance dimension for each of the 13 practical exercises (FBI, 2008). The ratings are designed to identify deficiencies in the NATs' performance to improve trainee performance or identify possible suitability issues warranting further action (F. J. Harmon, Supervisory Special Agent and Chief, Practical Application Unit, FBI Academy, personal communication, February 2009).

Unless an instructor observed a trainee performing negatively, the instructor assumed the trainee "did the job as assigned" (J. Wilson, Supervisory Special Agent and instructor, Practical Applications Unit, FBI Academy, personal communication, February 2009) and was rated as meeting expectations (3). If a trainee's behavior is observed to be deficient according to the established matrix the instructor will rate the trainee's performance as a one (1) or two (2). Because the majority of New Agents participating in each exercise was not observed, many were rated as meeting expectations (3) for their performance by default. Consequently, a potential existed for low variance and overestimation among individual performance scores, making it difficult to determine if the independent variables had any correlation to the dependent variable.

Table 4

*Practical Applications Performance Assessment Ratings*

| Rating Value | Rating | Performance Description |
|---|---|---|
| 1 | Fails to meet expectations | Trainee has not achieved the expected skill level for a practical exercise and who needs to improve based on the core competencies identified for that exercise. |
| 2 | Needs improvement to meet future training requirements | Trainee generally met expectations for each of the core competencies. Overall performance is marginally acceptable and requires improvement to meet future training expectations. |
| 3 | Meets expectations | Trainee achieved the expected skill level based on the core competencies identified for that exercise. |

*Note*. From *Practical Applications Unit New Agents Training Instructors Manual (IPAT)"*, by the Federal Bureau of Investigation, 2008, p. 7.

The PAU performance assessment design and potential lack of variance in the individual Practical Application performance assessment scores affected the results of this study. Therefore, an additional questionnaire was used to collect data to offset this potential lack of variance, providing greater statistical findings. The 360$^{o}$ Perceived Ability Questionnaire was created for this study. It was not part of the routine performance assessment process used to measure NAT performance in the Practical Application exercises.

*360° Perceived Ability Questionnaire*

The 360° Perceived Ability Questionnaire was a two-part, self-reporting, online survey containing questions with two specific purposes. The first part contained demographic questions that collected general, non-identifiable descriptive data of each participant, which was used to construct a general profile of the study sample. The descriptive information collected included: race, gender, age, New Agent national origin (ethnicity), years of formal education, general field of study in formal education, prior professional employment, years of prior law enforcement or military experience, and tactical training, if any.

The second part was comprised of Perceived Ability questions designed to establish variance in student performance in the assessments of the NATs' performance in the problem-based exercises. Participants assessed what they believe was their ability to perform in the ten Practical Applications performance dimensions (as described under Practical Applications Performance Assessment Dimensions). The participants rated their perceived ability as follows (Table 5).

Table 5

*360° Perceived Ability Ratings*

| Ratings | Definition |
|---|---|
| *Inadequate* | I am struggling and can use all the help I can get; |
| *Fair* | I know what is expected but sometimes I am unsure how to apply what was learned; |
| *Average* | I can apply what was learned but my performance needs improvement; |

| | |
|---|---|
| *Good* | I perform to expectations; and |
| *Excellent* | My performance exceeds expectations. |

In order to correlate the responses to the Practical Application performance rating dimensions, three of the five perceived ability responses reflected ratings similar to those in the PAU rating rubric (Table 6).

Table 6

*360° Perceived Ability Ratings and Comparative PAU Performance Ratings*

| 360° Perceived Ability Rating | Comparative PAU Performance Rating |
|---|---|
| *Inadequate* | Fails to meet expectations |
| *Average* | Needs improvement to meet future training requirements |
| *Good* | Meets expectations |

The remaining perceived ability responses, *Fair* and *Excellent,* offered additional descriptions for how the NAT perceived their own behavior, offering greater variance desired in the statistical analysis.

*Assessment of Performance Scores*

Quantitative analysis of self and instructor assessments are limited (Liu et al., 2002). Psychometric properties of 360-degree, multirater instruments are varied based upon the design of the instruments (Fletcher et al., 2002). A review of existing studies

determined that self-assessment and student-instructor agreement studies were more comparable to the design of this study. In a meta-analysis of self-assessment studies, Falchikov and Boud (1989) suggested that the choice of statistic in analysis clearly affects the results of each study, thereby challenging the measure of psychometric properties for these assessments. In support of using perceived ability responses as a performance measure, Fraser (1982) posited that the use of student perceptions may be more important that observed behaviors because they are "determinants of behavior more so that the veridical situation" (p. 511). Understanding how students perceive their own performance provided insight into how reflective thinking and emotional intelligence related to their performance.

## Variables

This predictive study tested the correlation coefficients between the two independent variables, which measured different aspects of reflective thinking (specifically critical reflection) and emotional intelligence (emotional quotient), and the dependent variable of performance. Findings determined the extent to which variations, for any of the variables, may correlate with each other. The results were analyzed with multiple regressions for any predictive value (Mauch & Birch, 1998), because the trainees' personal characteristics, as developed over time, occur prior to their participation in the FBI training.

Independent and dependent variables were treated as continuous, interval-level variables. This study examined two different independent variables (critical reflection as a subcomponents of reflective thinking and the emotional quotient of emotional

intelligence).Even though the QRT measured four subscales of reflective thinking to include: habitual action, understanding, reflection, and critical reflection (Kember et al., 2000), only the subscale of critical reflection was used as the measure of reflective thinking (independent variable) within this study. The other three subsets were analyzed to provide a complete picture of the affect of reflective thinking on performance. The Emotional Quotient (EQ) was the only measure of emotional intelligence (independent variable) in this study. The EQ was a composite score of fifteen emotional intelligence subscales as measured by the EQ-i: 125. Other individual emotional intelligence subscales were not analyzed for this study.

The performance dependent variables were the composite PAU scores (instructor-observed ratings). The composite PAU Observed Performance Assessment scores were calculated by adding the total scores in each of the ten performance dimensions then multiplying by the number of practical exercises (13).

Because a lack of variance was determined in the PAU Performance Assessment scores, the student-assessed scores collected in the 360$^{o}$ Perceived Ability Questionnaire were used as an alternate variable to the instructor-observed assessment scores. The 360$^{o}$ Perceived Ability scores were calculated as a composite score by adding the total scores in each of the ten performance dimensions, as reported by the participants in the 360$^{o}$ Perceived Ability Questionnaire. The participant and instructor scores were aggregated to determine a level of performance, to provide a quantitative definition of the dependent variable to use in follow-up analysis, if warranted. Analysis of the instructor-observed

and perceived ability scores is described in the Data Analysis section below. The following table lists the variables to be examined in this study (Table 7).

## Data Collection

All three instruments were accessed and completed on line through separate Internet sites. On-line instruments expedited the collection and analysis of the study data reducing time and costs (Muijs, 2004). Data storage was easier to maintain and secure after the study was completed. This delivery method provided convenience and further anonymity for the respondents. Conversely, this process may have contributed to a lower response rate as participants may have been less inclined to complete the questionnaires later. Similar to written instruments, non-response rates can be substantial, affecting study results by reducing the statistical power of the measures (Muijs, 2004). New Agent participants could become distracted or overwhelmed with other demands that may have forced them to prioritize their commitments, possibly disregarding the study questionnaires.

*Table 7*

*List of Independent and Dependent Variables*

| Category | Independent Variables | Dependent Variables |
|---|---|---|
| Reflective Thinking | Critical Reflection | |
| Emotional Intelligence | Emotional Quotient (composite score of the sum 117 items of the EQ-i:125, standardized based on a mean of 100 and standard deviation of 15)(Bar-On, 2004) | |
| Practical Applications | | Composite score for the total PAU performance scores of all 10 dimensions for all 13 exercises |
| Perceived Ability (if a lack of variance is determined in the Practical Application scores) | | Composite score for the total perceived ability score of all 10 dimensions |

Anonymity created additional obstacles to prompt participants to follow through on the survey responses or determine the reasons for not participating. Corrective action for non-response or low response rates was limited in this study design. The New Agent classes were addressed, periodically, to remind volunteers to complete the surveys.

To add a layer of protection between the researcher and the participants, another Training Division staff member assisting the researcher approached each class of NATs, at the earliest opportunity, between weeks 15 and graduation of the New Agents Training Program. All members of each New Agents class received a brief presentation about the

research study then asked to participate. Those Trainees interested in participating volunteered by signing an Informed Consent Form (Appendix E). Participants provided the last four digits of their social security number on the form to coordinate the compilation of data according to respondent. This number was the only unique identifier used in this study.

After the NATs read and signed the Informed Consent Form, the consent forms were collected. An FBI Training Division staff member working with the researcher provided e-mail notifications to each volunteer with one website link each to the 360$^{o}$ Perceived Ability Questionnaire, the QRT, and the EQ-i: 125. This staff member also provided code numbers and passwords required to access the EQ-i: 125. To complete the instruments, the participants accessed the links from Internet computers of their choice throughout the FBI Academy, at their convenience. Neither the researcher nor staff members were present while the participants completed the on-line instruments and questionnaire. The participants completed the questionnaires in any order. However, they must have completed all three instruments for the data to be included in the study.

When taking the EQ- i: 125, the participants logged onto the MHS Internet website using the code numbers and password provided by the FBI Training Division staff member. The participants then completed a "Permitted Access" agreement prior to accessing to the EQ-i:125 self-assessment. The longest of the questionnaires, the EQ-i: 125 took approximately 20 – 25 minutes to complete. The EQ-i:125 were scored and maintained through MHS who provided the individual datasets for all scores related to the total Emotional Quotient, the five emotional intelligence components and 15

subcomponents, to the researcher upon request. The results were reported in an excel spreadsheet format for analysis.

The QRT and the 360$^{o}$ Perceived Ability Questionnaire were accessed through separate Internet links through the Key Survey software program located on the FBI's secured Internet server. The e-mail survey links were unique to each participant; therefore, passwords and user names were not required. The total time to complete both the QRT and the 360$^{o}$ Perceived Ability Questionnaire was approximately 10 minutes. The responses for the 360$^{o}$ Perceived Ability Questionnaire and the QRT were collected directly through the Key Survey on-line program. The results were reported in an excel spreadsheet format for analysis. The entire survey process took no more than a total of 35 minutes to complete all three instruments.

NATs completed all Practical Applications exercises by week 15 of the New Agents Training Program at which time the PAU performance assessment scores for the participants were collected from the PAU instructors. The individual PAU performance assessment score were matched with the participant responses for all three instruments according to the unique identifier provided by the participant. Individual performance ratings for each participant were collected after the NATs completed the Practical Applications curriculum in Week 15.

Not all NATs who are contacted were willing to participate. As such, New Agent classes were contacted and samples collected until the reported data from a total sample of 183 NATs was accumulated. Based upon the response rate, with as many as nine New

Agent Training classes in residence at one time, a sample size of 183 New Agent participants was collected within nine weeks.

The researcher compiled the responses from all three surveys and the PAU performance assessment scores into an Excel spreadsheet. The responses were matched to each participant according to the New Agents Trainees' unique identifier on the Informed Consent Form. After the data was compiled, the identifying number was removed to ensure anonymity of the participant's responses (see discussion under Protection of Participant's Rights).

Before discussing data analysis, one point was relevant to understanding this study, as related to performance. In terms of analysis of performance scores, an exhaustive search of existing research did not produce a model that matched the unique design of this study. Comparable studies offered two possible considerations for analysis of the performance data as detailed in chapter 2 (Falchikov & Boud, 1989; Picciano, 2002). For purposes of this study, both perceived ability and instructor-observed performance scores were used, separately, to determine a level of performance to establish a quantifiable characterization of the dependent variable. Additionally, the data was analyzed from the PAU Observed Performance Assessment scores and the $360^{o}$ Perceived Ability scores by using either (a) the sum of both scores, (b) the average of both scores, or (c) the difference between both scores. Testing the measures using the data in different ways allowed greater opportunity to determine how the independent variables correlate with the dependent variable due to a greater potential to analyze measured variance. The scores provided a measure of performance on some level.

## Research Questions and Hypotheses

This study examined the following research question:

1. What is the predictive relationship of the dimensions of reflective thinking and emotional intelligence to FBI NATs' performance in the problem-based learning exercises?

This study tested the following hypotheses:

$H_0$: Reflective thinking (specifically critical reflection) and emotional intelligence will have no predictive relationships to performance of NATs in the problem-based learning exercises of the PAU.

$H_A$: Reflective thinking (specifically critical reflection) and emotional intelligence will have predictive relationships to performance of NATs in the problem-based learning exercises of the PAU. In all cases, for this hypothesis, the correlations are expected to be positive.

PASW® Statistics GradPack 17.0 for Windows (a Statistical Package of Social Sciences product) was used for data coding and analysis. Because the data collected from all three instruments was in an Excel spreadsheet format, the data transferred easily into this statistical program enhancing the ability to assess all statistical inferences, efficiently.

Regression analysis was used to determine relationships between reflective thinking, emotional intelligence, and performance of the NATs. A multivariate linear regression model (Figure 1) was created, based upon the results of this pilot study, providing a graphic description of the predictive relationships between reflective

thinking, emotional intelligence, (independent variables) and New Agent performance (dependent variable). This model summarized the relationships between reflective thinking, emotional intelligence, and performance. Linear regression offered potential inferential value by determining the predictive ability of both variables relative to performance (Babbie, 2001).

Figure 2 represented the statistical model for variables for this study.

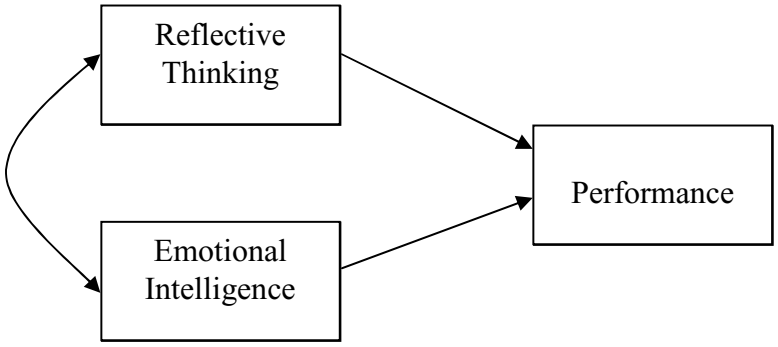


*Figure 2*: Multivariate Linear Regression Model

Multiple regression was used to predict an individual outcome or explain correlation between a groups of variables (Osborne, 2000). Regression analysis added a deeper dimensional value when analyzing the relationship among reflective thinking, emotional intelligence, and performance. Multiple regressions were used to determine the expected values of the dependent variable given certain values of independent variables (Vogt, 1999).

Data analysis included multiple regression analysis on the collected data to examine the variance across the Practical Applications observed performance scores. The

items of analysis for this study were scores in the ten rating categories for each of the 13 individual problem-based, practical exercises based on the three-factor performance matrix. Univariate analysis examined the individual variables utilized, such as the number of cases, the mean, and the standard deviation. Through bivariate analysis, the study examined the relationship between reflective thinking and the PAU observed scores, and emotional intelligence and the PAU observed scores. Univariate and bivariate statistical tests may not be as sensitive to complex relationships as multivariate statistics (Tabachnick & Fidell, 1996).

Multiple regression examined the relationship of both independent variables, reflective thinking and emotional intelligence, on the dependent variable, performance, in the same model while controlling for the effects of other variables (Vogt, 1999). Multiple regression analysis also controlled more for Type 1 errors in research designs similar to this study design, thereby making multiple regression analysis a better method to determine correlational relationships. Finally, as noted above, different approaches to defining the performance variable were used. To control for inflation of Type 1 error, the a priori alpha level for rejecting the null hypothesis in the regression models will be divided by two ($\alpha = .05/2 = .025$). Only the more parsimonious model will be interpreted.

## Review of the Pilot Study

Pilot studies are critical to the research process (Van Teiijlingen, Rennie, Hundley, & Graham, 2001). Pilot tests are conducted as a "full dress rehearsal" to test the research design (Gorard, 2001, p. 102). Conclusions resulting from the pilot study can determine if the selected measures can assess the relationships between reflective

thinking, emotional intelligence, and performance (Schwab, 1999). A pilot study was conducted to identify any potential problems with the study design, survey administration, and response levels of the NAT participants. The pilot study helped to minimize risks in the proposed study by identifying potential problems and consequences with research design and procedures (Van Teiijlingen et al., 2001).

The 360$^{o}$ Perceived Ability Questionnaire and the QRT were put through a two-stage, pretest pilot process (Gorard, 2001). This process allowed for scrutiny of the questions in both instruments. In the first stage, FBI Academy faculty members, all FBI SAs, were asked to complete each questionnaire. Feedback was provided regarding the structure of questions, readability, relevance, and potential gaps of information. Based on the feedback, the demographic questions were reworded to clarify the intent of the questions to improve content validity. The questionnaire was modified, as necessary, to fix any identified or potential problems. For example, question number 7, What was your prior professional employment before joining the FBI?, a response added to the list was "FBI Professional Support" as several members of any New Agents Training class are FBI employees who had worked in other capacities. This position was not included in the original question formulation. The EQ-i 125 was not used in the pilot pre-test due to the extensive research conducted on the instrument (Bar-On, 2004). The EQ-i: 125 was used in the full pilot study.

For the second stage, a full pilot study was conducted using a current New Agent Training class, according to the research design procedures established for this study. No significant problems with the research design were found during the pilot study. A minor

problem occurred with the on-line delivery of the instruments. A participant notified the Training Division staff member of a faulty link for the EQ-i: 125. This issue was corrected immediately with the dissemination of a second e-mail to all participants with another web link.

The pilot sample consisted of 19 trainees whose data sets were complete. Although all members of the New Agents class were invited to participate, only 39 trainees volunteered to participate of 50 trainees. Of the 24 responses, six NATs who competed or partially completed the survey instruments or from NATs who were recycled into class number 09-05 from earlier NA Training classes were excluded. Fifteen NATs did not follow through with their original commitment.

The low response rate may be indicative of several reasons: other commitments or priorities associated with the NA Training Program; a lack of incentive for NATs to participate in such studies. Although the purpose of the study is directly related to the operations of the FBI and the NA Training Program, based on the high number of trainees who declined to participate in the pilot study, low participation can be attributed to disclosing the study as part of a research plan that involved a doctoral dissertation. Such a disclosure may create a bias that may dissuade individuals from participating.

*Issues or Potential Problems*

All participation was voluntary. No participants reported any difficulties or harming effects because of participating in the study. No technical problems became apparent. Although not reported as an issue in the pilot study, a potential problem for this study were the number of individual questionnaires the participants is required to be

completed for this study. The potential existed for a participant, inadvertently, to forget to complete a survey or to delete the e-mail responses that contain the links to the online surveys. As stated previously, each New Agents class received periodic reminders prompting the volunteers to complete the surveys. Care was taken so that these reminders were not excessive so as to be misconstrued as mandates for participation in this study. Although a number of volunteers did not follow through, the number of uncompleted surveys was not a problem in the final analysis of the data.

## Protection of Participant's Rights

### *Relationship to Population*

As a Supervisory Special Agent and Chief of the Investigative Training Unit, FBI Academy, I, the researcher, was responsible for leading and managing a training unit that teaches investigative methods and strategies as part of the NA Training Program curriculum. As the lead for the New Agents Training Curriculum Committee, I provided oversight for the design and development of the entire 20-week curriculum framework to ensure that the overall curriculum included all necessary subject areas. Although I supervised a NAT instructional unit and managed the NA Training Program curriculum, I had neither direct contact with nor a supervisory relationship with the NATs. The research study did not include any material from or administered by instructors of the Investigative Training Unit. Nor did I have any supervisory relationship with the instructors in the PAU or *direct* influence over the content or exercises delivered in Practical Applications curriculum. The NAT were advised that their performance scores

of the PAU exercises in the New Agent Training curriculum were used to test the correlation of the results of the instruments and level of performance.

*Informed Consent*

Institutional Review Board (IRB) procedures for Walden University (study number 12-10-09-0103110) and the Department of Justice/Federal Bureau of Investigation were implemented to assure the protection of participant's rights in the course of this study. An informed consent form (Appendix E) was constructed, fully explaining the study and its process was provided to each potential participant. These guidelines were followed when implementing this research project.

Each individual who self-selected to participate completed two separate consent forms. The first was the attached Informed Consent Agreement (Attachment 1) which was provided, upon request, by those NATs who wished to participate in the study. The participants completed an approved consent form, obtained from the researcher, prior to completing any of the instruments. Participation in this study was strictly voluntary and did not affect their standing as NATs. The NATs could withdraw from the study at any time.

As a second protective measure, and to comply with MHS polices, research and ethical guidelines, each participant who desired to take the EQ-i:125 was required to complete a second, standard MHS consent form prior to being provided code numbers and passwords. After logging onto the MHS website, participants had to once again self-select by agreeing to the online 'Permitted Access' statement prior to having access to the EQ-i:125 self-assessment instrument.

Participants accessed all three instruments through secured Internet websites. The 360$^{o}$ Perceived Ability questionnaire and QRT were accessed through a Key Survey site residing on a secured Internet server located at the FBI Academy. The Participants accessed the EQ-i: 125 through a secured MHS website. The participants received code numbers, passwords, and instructions on how to log onto the MHS website to complete the EQ-i:125 assessment.

*Anonymity and Confidentiality*

Consistent with the study, a unique identifier was assigned to each participant using the participants' New Agent Class and last four digits of the trainee's social security account number. The use of a unique identifier was necessary to match responses among all three survey instruments and the PAU assessment scores for that individual but help maintain anonymity. After the data was matched for all four components, the unique identifiers were removed from the data. The unique identifier allowed for use of the collected data while protecting the identity of the participant.

To ensure participation was voluntary, potential participants requested and completed a consent form, located a computer with Internet access and accessed each instrument through a separate web-link. For the demographic questionnaire and the QRT, participants completed survey through a survey link on a secured Internet website. Using code numbers and passwords to log onto Multi-Health Systems, Inc. (MHS) secure website, participants agreed to a second MHS consent form before completing the EQ-i:125. At any time, the participant could log off the website; hence, no data was collected.

The individual data collected through this research was not disclosed or shared with anyone except those individuals associated with this research. The data was only reported in the aggregate within this research paper to protect the confidentiality of the information, as it pertains to each individual.

*Data Protection*

The researcher, the FBI Senior Scientist, and an FBI training staff member of the PAU had access to the some of the raw data and performance scores. The raw data collected through the FBI Academy was maintained solely by the researcher. The raw data collected through MHS was maintained by MHS and was not distributed outside MHS or the FBI.

The data collected in the demographic questionnaire and QRT was maintained on a secure server at the FBI Academy that was accessed only by the researcher. All information was anonymous. Aggregate descriptive data from the demographic questionnaire was reported, as well as the aggregate data reported through the QRT regarding habitual action, understanding, reflection, and critical reflection was used.

MHS is a publisher and developer of professional assessment materials for educational and psychological testing. Data collected by the EQ-i 125 was maintained and archived by MHS anonymously. MHS did not collect any information that could personally identify any individual who participated in this study. MHS stored the data in accordance with the ethical and professional standards of the American Psychological Association and Canadian Psychological Association.

This chapter described the methodology and instrumentation to be used in this nonexperiemental correlational research study, to determine the relationship between reflective thinking and emotional intelligence and performance of FBI NATs in the Practical Application Unit practical exercises. Details were specified regarding the research population, sample, and setting. The reasons for selecting the research design and for rejecting other research designs were described. The QRT, EQ-i: 125, and 360$^{o}$ Perceived Ability Questionnaire data collection instruments were described as part of the data collection process.

Finally, chapter 3 detailed the data analysis procedures to be used to include multiple regression analysis to test the null hypothesis that reflective thinking and emotional intelligence will not have a positive predictive relationship to the performance of NATs in the problem-based learning exercises. This chapter reviewed the pilot study that tested the proposed design study, reporting that the results of this study did not indicate any significant problems or negative effects on the participants. Finally, procedures for the protection of participants to include informed consent, anonymity, confidentiality, and data protection were described.

Chapter 4 will provide a discussion of the results obtained in this study.

# CHAPTER 4 RESULTS

## Introduction

This study focused on the predictive relationships of reflective thinking and emotional intelligence to individual performance to understand the role of these constructs within the learning process. This chapter contains the results of correlational research examining if the independent variables affect the performance of FBI NATs during problem-based learning exercises. Chapter 4 also includes a discussion of the setting and sample selection, instrumentation, data collection techniques, and data analysis processes, and protection of participant's rights for this study, and a summary of the procedures used and the findings of the data analysis for the study.

## Procedures

This quantitative study focused on the predictive value of reflective thinking and emotional intelligence on the performance of the NATs. A total of 600 NATs were invited to participate in this study after they completed Week 15 of the 20-week training program. Participation was voluntary and had no influence on their standing in the New Agents Training Program. A total of 493 NATs (82.2%) completed the informed consent forms. Participants received e-mail messages with online links to access the three self-report instruments used in this study (discussed next). Participants accessed the survey instruments from Internet computers of their choice. Study instruments included the Questionnaire for Reflective Thinking (Kember et al., 2000), and the Emotional Quotient Inventory 125 (Bar-On, 2004), and the $360^{o}$ Perceived Ability Questionnaire (Appendix D) discussed below.

Research assistants, who were FBI Training Division employees, monitored the completion rates for each instrument for each class after the survey e-mails were sent. Most of the respondents completed the surveys within the first week. After the first week, a research assistant reminded the New Agents class, as a whole, to complete the surveys as soon as possible. Of note, the reminders did not significantly increase the response rate. No problems were reported in the on-line receipt or completion of the surveys, which may indicate that a lack of response was by the respondent's choice.

The research assistants collected the Practical Application Unit (PAU) observed scores, after the PAU instructor calculated the scores. Scores from participants who were removed from their original New Agents class were not included in the sample. The participant responses for the QRT, 360$^{o}$ Perceived Ability Questionnaire, and PAU observed scores were collated by individual identification code, after which the identification codes were removed to ensure anonymity of the participants. This process continued with each New Agents class, for a total of 12 classes, until an adequate sample was obtained from the responses and scores received.

## Data Filtering and Selection

The data were collected in three separate venues: through the Key Survey website (QRT and 360$^{o}$ Perceived Ability Questionnaire), through the Multi-Health Systems (MHS) website (EQ-i:125), and PAU instructors (observed performance scores). The critical reflection subcategory of the Reflective Thinking scores were calculated from the QRT, Perceived Ability scores (PA) were compiled from the 360$^{o}$ Perceived Ability Questionnaire, and the overall observed performance scores (PAU), were summed and

scored within a spreadsheet format. The overall Emotional Intelligence score (EQ) was scored electronically through the MHS website. All scores were compiled and delivered to the research assistant in a spreadsheet format. All data were compiled and placed into a spreadsheet format, collated and organized by the four-digit identification code assigned to each participant. The research assistant removed all identifying participant information from the spreadsheet before the data were processed.

After they were organized, the responses were imported into PASW® Statistics GradPack 17.0 for Windows (SPSS). The response distribution was analyzed for anomalies that would otherwise affect the results of this study. Frequencies for all items were screened for data entry errors. None was discovered. However, three individual responses to two specific demographic questions (age and prior tactical training) were missing. The missing responses were determined not to be germane to the results of analysis and, therefore, did not disqualify any other respondents. Of the 493 NATs who signed the Informed Consent Agreement (Appendix E) 139 participants (23.1%) did not follow through with the study.

Because these volunteers were anonymous, those who did not follow-through with the study could not be queried as to the reasons. This lack of completion could be accounted for, in part, by the demands placed upon NATs during their training program can be overwhelming. These demands include after class assignments and practical exercises, take-home exams, and web-based training, thereby minimizing the time available to complete the study surveys. Additionally, as Trainees could withdraw from the study at any time, some volunteers may have decided to exercise this option.

A single instructor did not evaluate eight participants in all 13 PAU exercises, thus they were removed from the data set. In total, responses from 171 participants were eliminated (28.5%). A total of 183 participant responses were for used in the study, representing 30.5% of the total sampling frame of 600. This sample exceeded the minimum sample size of 170 needed to assure minimum statistical power (Faul, Erdfelder, Lang, & Buchner, 2007).

## Research Questions

This study was designed to examine the relationship(s) of reflective thinking and emotional intelligence to performance by answering the following research question: What is the predictive relationship of the dimensions of reflective thinking and emotional intelligence to FBI NATs' performance in the problem-based learning exercises?

To answer the central research question, the characteristics of the sample were first examined to assure the external validity of the results. Reliability analysis was then examined for the scores produced by each instrument to establish measurement validity. The response distribution for each variable was examined to include the means, *range*, and standard deviations and to make inferences about the validity of each measure. Finally, regression analysis was used to examine the relationship(s) of reflective thinking and emotional intelligence to performance. Follow-up examinations of the results were conducted based on the unexpected results of the regression analysis and are discussed below.

## Population and Sample

The population for this study was NATs in residence at the FBI Academy, Quantico, Virginia. After assessing which participants met the designated criteria for this study, as delineated in Chapter 3, not all participants were included in the study sample. Although a normal amount of difference exists in every cohort, no irregularities were apparent in the sample (discussed next), based upon my knowledge of the NAT cohorts. Therefore, generalization of these results to other NATs seemed to be supported.

This sample was diverse in race, education, and professional experience, but predominantly male, White, and highly educated. The sample contained 144 male NATs and 39 female NATs. The sample was made up of 153 White participants, 7 Asian, 10 Black, 9 Hispanic, and 4 other non-White participants. Ages ranged from 24 to 37 years, (M = 30.34). Although 106 participants held a minimum of an undergraduate degree, 59 held Master's, 10 held doctoral, or 8 held law degrees. The sample contained 31 participants with prior law enforcement and 41 participants with military experience, with the remaining 111 participants from other professional areas (Table 8).

Table 8

*Response Frequencies of Prior Professions* (*N* = 183)

| Prior Profession | Frequency |
|---|---|
| Military | 41 |
| Law Enforcement | 31 |
| Accounting | 15 |
| Law | 12 |

| | |
|---|---|
| FBI Professional Support | 11 |
| Computer Sciences/Information Technology | 11 |
| Intelligence | 10 |
| Science or Forensics | 4 |
| Education | 2 |
| Languages | 2 |
| Other | 44 |

## Instrumentation

Three self-report instruments were used in this study to measure: (a) reflective thinking, from a subscale of the Questionnaire for Reflective Thinking (Kember et al., 2000); (b) an individual's emotional quotient, the Emotional Quotient Inventory 125 (Bar-On, 2004); and (c) perceived ability, the 360$^{o}$ Perceived Ability Questionnaire, which was designed for this study. The NAT performance scores were calculated from the data collected through the PAU instructor-observed measure. The Perceived Ability scores were calculated as a composite score by adding the total scores in each of the ten performance dimensions, as reported by the participants in the 360$^{o}$ Perceived Ability Questionnaire.

As reported in Table 9, the reliability estimates (Cronbach's α) fell within acceptable ranges for internal consistency. Although a minimum coefficient value of .70 is considered acceptable to demonstrate satisfactory internal consistency (Gleim & Gleim, 2003), Lucas and Tan (2007) suggested that a coefficient value of .50 is generally

acceptable within educational research. Hence, all scores from the four key measures were used in the data analysis. Of note, although the PAU measure was tested for reliability using all 130 items (ten performance dimensions rated in each of 13 exercises), only 48 items had any variance to calculate the reliability estimate.

The overall response distribution was also examined, to include the means, *ranges*, and standard deviations. Response ranges for critical reflection attained scores across all possible ranges. Perceived ability attained an acceptable distribution of scores in the mid to high ranges. Because the EQ scores were standardized to a mean of 100 and standard deviation of 15, the potential range of EQ scores could not be easily determined. But, both the lowest and highest scores were approximately 2 standard deviations away from the mean, suggesting an acceptable distribution of scores. The actual range of the PAU observed performance scores was attenuated with only a small amount of variance observed ($M = 386.76$; $SD = 2.83$).

Table 9

*Means, Standard Deviations, Range[A], and Cronbach's alpha Scores*

| Variable | Items | M | SD | α | Range | |
|---|---|---|---|---|---|---|
| | | | | | Potential | Actual |
| Critical Reflection | 4 | 11.17 | 3.36 | .781 | 4 - 20 | 4 - 19 |
| Emotional Intelligence | 117 | 106.57 | 10.20 | .667 | unknown[A] | 69 - 128 |
| PAU Observed Performance | 130 | 386.76 | 2.83 | .640 | 130 - 390 | 375 - 390 |
| Perceived Ability | 10 | 40.66 | 5.04 | .874 | 10 - 50 | 22 - 50 |

*Note.* $n$ = 183. A = EQ scores are standardized to a mean of 100 and SD of 15.

## Results

To test the existence of the predictive relationship(s) of reflective thinking and emotional intelligence on the performance of NATs in the problem-based learning exercises, the following null and alternative hypotheses were developed:

$H_0$: Reflective thinking (specifically critical reflection) and emotional intelligence will have no predictive relationships to performance of NATs in the problem-based learning exercises of the PAU.

$H_1$: Reflective thinking (specifically critical reflection) and emotional intelligence will have predictive relationships to performance of NATs in the problem-based learning exercises of the PAU. In all cases, for this hypothesis, the correlations are expected to be positive.

Regression analysis was conducted to test the null hypothesis. Table 10 summarizes the results. The analysis did not produce any statistical significance in the

expected values of the dependent variable given the values of critical reflection and emotional intelligence. Therefore, the null hypothesis was not rejected. Regression analysis relies on sample size, reliable measures, linear relationships between the variables, and normal distributions (Tabachnick & Fidell, 2001). The distribution of the PAU observed performance scores appeared to violate the assumption of normality because of the lack of variance. The scores were only at the high end of the range of potential scores and therefore no linear relationship could be found.

Table10

*Model Summaries of Regression Analyses for Performance Measures*

| Variable | $R^2$ | Model | B | SE | *p* |
|---|---|---|---|---|---|
| PAU | .017 | (constant) | 389.012 | 2.264 | <.001 |
| | | CR | .071 | .062 | .259 |
| | | EQ | -.029 | .021 | .166 |
| PA | .173 | (constant) | 18.099 | 3.698 | <.001 |
| | | CR | .179 | .102 | .081 |
| | | EQ | .193 | .034 | <.001 |

*Note:* CR = Critical Reflection; EQ = Emotional Intelligence; PAU = Observed Performance; PA = Perceived Ability.

Because of the expected lack of variance in the PAU observed performance scores (as discussed in Chapter 3), a regression analysis was also conducted using the Perceived Ability scores as an alternative performance variable. When perceived ability was considered as an alternative performance measure, analysis indicated a moderate relationship between emotional intelligence and perceived ability. Significance was identified between both critical reflection (*b* = .179) and emotional intelligence (*b* = .193)

with perceived ability (Table 10). Therefore, the null hypothesis cannot be refuted completely.

## Relevance to Research Question

This study was designed to answer the research question: What is the predictive relationship of the dimensions of reflective thinking and emotional intelligence to FBI NATs' performance in the problem-based learning exercises? A linear regression model tested the relationship and yielded no statistical significance. The analysis revealed that critical reflection and emotional intelligence had no relationship to the performance of NATs, when the PAU observed performance scores as the dependent variable. Additional analysis using perceived ability an alternate performance variable produced a small level of significance indicating the possibility of a predictive relationship with the independent variables (reflective thinking and emotional intelligence).

Because the initial regression analyses revealed no significant results, analyses were conducted on variables that were re-conceptualized from the original PAU observed performance and Perceived Ability scores. The additional analysis was conducted to address the limited predictive capability of the independent variables on the dependent variable in the original model. Additional exploratory multivariate analyses were conducted to test alternative formulations of the dependent variable to include (a) the sum of the PAU and PA scores, (b) the difference between the PAU observed and PA scores, (c) the percentage of the individual PAU and PA scores, and (d) re-conceptualized PAU and PA scores to allow for a comparison consistent with the established perceived ability

5-point scale. Results of all additional analyses were not remarkably different from those of the original model and, therefore, not reported.

## Follow-up Analysis

As noted, the distribution of PAU scores was attenuated and not normally distributed, which may have accounted for the lack of significant findings. Closer examination of the PAU scores showed that all 183 NATs scored 3 (the top score) on 82 of the 130 items, and that the variance in scores was due to the remaining 46 items. Hence, a choice was made to disaggregate the PAU total scores to see if the small amount of variance could be isolated and studied further. Measuring performance within the ten behavior dimensions was not seen as tenable, however, as the dimensions are multi-faceted and did not withstand psychometric analysis as scales. Therefore, subscale scores were calculated for each of the 13 practical exercises (Appendix F).

After computing the 13 subscale scores, ten of those 13 scales still showed little to no variance in the scores. Of the remaining group, only two subscales showed acceptable measurement precision, to be useful for additional analysis: Concepts and Tactics for Survival 3 (CATS3) and Surveillance 1 (S1). Table 11 contains the descriptive statistics and correlational relationships of these three subsets to the independent variables.

Primary analysis showed some statistical significance for three of the 13 subscales. But further analysis revealed that only the CATS3 and S1 subscales showed acceptable measurement precision. Variance in both subsets is relatively low. The results indicate that a relationship may exist between the CR and EQ when the New Agents engage in these exercises. For CATS3, significance determined both a positive

correlation with critical reflection (*b* = .114) and a negative correlation with emotional intelligence (*b* = -.105). For S1, significance indicated a positive correlation with critical reflection (*b* = .122) and with emotional intelligence (*b* = .093).

Table 11

*Correlations, Means, and Standard Deviations of Exercise Performance Variables*

| | *r* | *r* | *M* | *SD* | α |
|---|---|---|---|---|---|
| Variables | CR | EQ | | | |
| CATS3 | .114 | -.105 | 29.99 | .148 | .556 |
| S1 | .122 | .093 | 29.82 | .802 | .708 |

*Note:* CR = Critical Reflection; EQ = Emotional Intelligence; CATS3 = Concepts and Tactics for Survival 3 and S1= Surveillance 1.

## Summary and Conclusion

Chapter 4 provided the results of regression analysis that support the null hypothesis that critical reflection and emotional intelligence have no predictive relationships to performance. Because the PAU performance measure was found not to be a valid measure, follow-up analysis was conducted on disaggregated components of the measure to determine any existence of variance. Results of the follow-up analyses produced modest significance levels.

An interpretation of the findings of this study, as they relate to the scholarship and implications for future studies, is discussed in Chapter 5.

# CHAPTER 5 SUMMARY, CONCLUSION, AND RECOMMENDATIONS

## Introduction

This study was an exploration of the predictive relationship between reflective thinking, specifically critical reflection, and emotional intelligence and performance. Data were collected through three self-report instruments and from instructor-observed evaluations. Chapter 5 presents an overview of the study and an interpretation of the study findings. It includes a discussion of the implications for social change and recommendations for action and future research. The chapter concludes with a statement about the direction of the FBI New Agents Training Program.

## Overview

In the wake of September 11, 2001, SAs of the Federal Bureau of Investigation (FBI) must be adept in handling complex investigative and intelligence issues. Because the FBI is responsible for protecting United States citizens against criminal acts and acts of terrorism worldwide, preparing NATs to assume their responsibilities successfully, as SAs, is a challenging assignment. The FBI must continue to prepare New Agents to operate in a volatile global environment to ensure the security of the United States and its interests (FBI, 2009c).

The challenge to the FBI Academy faculty is to create an effective learning environment to develop NATs who are prepared to handle all responsibilities. Understanding the cognitive and affective influences on learning is critical to creating environments to effectively train any individual (Dewey, 1938; Kegan, 1994; Mezirow,

1998), including FBI NATs. Trainees must demonstrate the knowledge and proficiency to make immediate contributions to organizational effectiveness. Critical reflection and emotional intelligence appear related to a NAT's ability to make sense of and then apply new knowledge effectively. Knowing that reflective thinking and emotional intelligence can predict performance, faculty can incorporate strategies to create more effective organizational learning programs (Cherniss, 2001; Rozell et al., 2002; Vera & Crossan, 2005).

Trainees' suitability to become SAs continues to be judged by their ability to manage themselves and work effectively with others, a primary element of emotional intelligence (Bar-On, 2004; Goleman, 2001) through established suitability dimensions. These suitability dimensions echo the personal and social competencies of emotional intelligence needed for successful job performance (Goleman, 2001). Faculty awareness of how one's emotional intelligence influences the NATs behavior may help faculty identify trainees who may excel throughout the program. More importantly, such insight can allow faculty to develop useful approaches to identify those NATs who are less successful, but not deemed unsuitable, to help improve their performance deficiencies.

The theoretical foundations of reflective thinking and emotional intelligence suggest a direct relationship between the cognitive and affective domains of learning (Bar-On, 2000; Kegan, 1994; Mezirow, 1991, 2000; Salovey & Mayer, 1990). Current scholarship supports arguments that reflective thinking and emotional intelligence can predict performance (Choy, 2009; Nafukho, 2009). Few studies have examined the constructs of reflective thinking and emotional intelligence and their potential to

influence performance (Jaeger, 2003; Phan, 2008d), in general. Relatively few empirical studies have examined reflective thinking in any context and none in relation to emotional intelligence. No research exists that explores these constructs in relation to law enforcement. Yet, understanding such relationships is critical to developing more effective learning environments for the FBI and law enforcement, in general.

To test this premise, the predictive relationship(s) between reflective thinking and emotional intelligence to the performance of the FBI NATs in problem-based learning exercises was examined. Of 600 NATs in residence at the FBI Academy, Quantico, Virginia, 183 Trainees (30.5%) participated in this research generating a sample representative of the make-up of New Agent cohorts predominantly male, but diverse in age, race, education, and professional experience,

Three self-report measures were used to collect research data. Critical reflection (CR) was measured by the Questionnaire for Reflective Thinking (QRT) (Kember et al., 2000). The Emotional Quotient Inventory-125 (EQi-125) (Bar-On, 2004) measured the individual's overall emotional intelligence (EQ). The 360$^{o}$ Perceived Ability Questionnaire gathered Perceived Ability scores and demographic data. Observed performance data were obtained from NAT evaluation scores compiled by the Practical Applications Unit (PAU) faculty.

The primary focus was answering the question: What is the predictive relationship of the dimensions of reflective thinking and emotional intelligence to FBI NATs' performance in the problem-based learning exercises? Regression analysis did not determine a predictive relationship between observed performance and CR or EQ.

However, when perceived ability was used as an alternative performance variable, analysis indicated the existence of a moderate relationship between critical reflection ($b$ = .179) and emotional intelligence ($b$ = .193). These results indicate a relationship between NATs' level of emotion intelligence, their ability to reflect critically, and their perception of their own performance. Because the primary hypothesis was not supported, individual exercise sub-scales derived from the PAU observed performance data, were disaggregated in a follow-up study. Scores were analyzed to isolate existing variance for further study. Results suggest that a relationship may exist between the critical reflection and emotional intelligence when the New Agents engage in only two of the 13 practical exercises evaluated by PAU faculty: Concepts and Tactics for Survival 3 (CATS3) and Surveillance 1 (S1) exercises.

## Interpretation of Findings

Results of the primary analyses support the null hypothesis that critical reflection and emotional intelligence have no predictive relationships to performance. Closer scrutiny suggested that the PAU observed performance measure may not have been a particularly valid measure of performance. The distribution of PAU scores was attenuated and not normally distributed, may have contributed to the inability to detect potential relationships, which may have contributed to the inability to detect potential relationships. When the PAU was disaggregated into exercise sub-scales the small levels of variance that did exist produced modest significance levels indicating some evidence of correlation among the variables.

Some follow-up studies were more enlightening. When perceived ability was considered as the performance variable, regression analysis indicated slightly significant relationships with both critical reflection ($b$ = .179, $p$ = .081) and emotional intelligence ($b$ = .193, $p$ = <.001). Research indicates that the higher one's level of emotional intelligence, the greater the potential of the individual to perform effectively to meet environmental demands (Bar-On, 2007). Critical reflection allows individuals to integrate prior knowledge with experience (Mezirow, 1999) to analyze problems to improve performance through objective reframing of perspectives (Kegan, 1994).

The performance variable was reconceptualized to determine why the original measure, the PAU, proved to be inadequate. Although regression analysis did not show significance indicating predictive relationships between either critical reflection or emotional intelligence and observed performance, the follow-up correlational analysis produced a small level of significance. Subscales based on individual practical exercises derived from the PAU scores indicate possible relationships between the dependent and independent variables. For the CATS3 exercise the relationship with critical reflection was positive ($r$ = 114) but with emotional intelligence ($r$ = -.105) the relationship was negative. For the S1 exercise, the relationship with the critical reflection ($r$ = .122) and emotional intelligence ($r$ = .093) were both positive.

To summarize, results suggest that the higher the NATs' level of emotional intelligence, the greater their awareness of their potential to perform effectively in some specific domains. Student perceptions are more determinant of behavior (Fraser, 1982) and therefore, may be a better predictor of performance than observed behaviors.

Inclusion of student perceptions of their own performance as part of overall performance evaluation may provide faculty a more comprehensive representation of NAT suitability as SAs.

## Implications for Social Change

"Institutions are designed to serve human needs in society" (Sirgy, 1986). The FBI is a prominent government institution established to preserve one of the most basic of human needs – safety and security on a national level. The FBI is responsible for protecting the American public and its interests, world-wide (FBI, 2009). Social change cannot occur if members of a society question their safety and security.

The role of the FBI in society is to defend citizens from the inherent dangers of an unpredictable enemy. Especially since 2001, the American public is increasingly intolerant of acts of ineffectiveness of federal agencies charged with protecting the country, to include the FBI. Congress, advocacy groups, the media, and the public continually scrutinize the Bureau's actions in maintaining national security. Given that, the current global environment is fraught with constant threats of terrorism, the FBI must be efficient and effective in detecting, disrupting, and dismantling all threats to the safety of American citizens. FBI SAs protect the citizens who are not in the position to protect themselves. Few institutions are charged with such a role to continue to move the United States in a positive direction through its enforcement and intelligence responsibilities.

The FBI Academy faculty influences positive change in society through effective training of NATs who are prepared to make immediate contributions to the organizational mission. Preparing individuals to become effective FBI SAs able to meet

their new professional challenges is a daunting responsibility, but one that is critical to the national security of the United States. Faculty members must continually seek to improve the learning environment and instructional practices to ensure the future of a prominent organization. How faculty understand how NATs process new learning then change their behaviors to effectively perform in practical exercises is essential to the development of training practices.

The process used to measure observed performance holds value when it accurately assesses the attributes of NAT performance that directly relates to their expected job performance. More importantly, this study identified deficiencies in a performance measure that can have an indelible impact on the future of all New Agent Trainees. If their performance is not evaluated appropriately, two damaging results can occur: 1) unnecessarily removing an otherwise capable New Agent from the program denying the individual of a rewarding career and the organization of a productive SA; or more importantly, 2) detrimentally promoting an unsuitable Trainee to become an FBI SA.

The FBI is just one law enforcement agency of thousands, nationwide, all concerned with the security of their communities. As expressed in a recent conference, "the future of law enforcement training relies on the overall understanding that the learner and learning are the focal points of all educational endeavors" (J. Jarvis, Chairman, Futures in Law Enforcement Working Group, personal communication, March 25, 2010). The results apply not only to the training philosophy of the FBI but are applicable to law enforcement, in general, as these concerns are being echoed in most law

enforcement training venues (Birzer & Nolan, 2002; Hundersmarck, 2009). Performance cannot be affected unless faculty understand how the NATs learn or what affects their learning.

## Limitations of this Study

The study sample ($n$ = 183) exceeded the recommended minimum sample size of 170 (Faul, Erdfelder, Lang & Buchner, 2007). A larger sample may have contributed to greater variance thereby possibly establishing trends identified by the current sample. But, as noted elsewhere, the challenge may not have been with the sampling process, but with the use of the PAU as a measure of performance, given how it is implemented in the New Agent training environment. Because of the importance placed on adequate performance and the competency-based nature of the exercises, for a group of individuals who were selected for this training based on these skills, no NATs will ever be found in the lower end of the *theoretical* distribution of scores that the PAU could produce, at that point in the term. By comparison, this approach is not unlike trying to conduct a study of academic performance with only honors students in the sample.

Because a larger sample may have identified stronger results, it is necessary to address study response rates. NATs may have agreed to take part upon initial solicitation for participants only when the research assistants were present. Afterwards, the Trainees could re-consider their commitment then decline to follow through with the surveys. The on-line structure of the study design also created an inherent obstacle for participants. To access the surveys, participants had to locate an Internet computer on the Academy campus where Internet computer access is limited. Although participants could access the

surveys from outside computers, most NATs do not leave the FBI Academy campus during the 20-week training program and therefore, are reliant on the limited computers available.

The response rate (30.5%) for this study fell mid-range within the varied reported average response rates (6% - 75%) for online studies (Deutskens, Ruyter, Wetzels & Oosterveld, 2004; Sheehan & McMillan, 1999). Because the data were collected in different ways, through different sites, rather than completed through a single survey packet, the study design may have contributed to the percentage of respondents who did not follow through with their commitment. The number and length of surveys may have dissuaded volunteers who intended to participate, however (Deutskens et al., 2004). In particular, the EQi-125, which required up to 30 minutes to complete, had a completion rate of 40% (193) as compared to the response rates of 52% for the QRT (260) and 51% for the 360$^{o}$ Perceived Ability Questionnaire (253).

Scrutiny of the PAU observed performance scores suggests that the instrument did not adequately measure NAT performance, as implemented. The PAU three-point item scaling may not have been sufficiently sensitive to discern critical differences in performance related to either critical reflection or emotional intelligence. A broader performance measure used to evaluate NAT performance may be more sensitive to these traits. Analysis results indicate that a trend in these relationships may be more prominent within the PAU observed performance scores if the sample was larger identifying more variance.

The PAU scores for the non-respondents were studied to understand the context of the sample scores. A noticeable amount of variance was observed in the PAU performance scores for a number of participants who were disregarded due to incomplete survey responses. The scores of these participants may have added greater variance in the PAU scores that may have resulted in analysis that is more conclusive.

In spite of the lack of significant results with PAU total scores, the results from the follow-up analyses indicated that reflective thinking and emotional intelligence may have some identifiable influence on specific exercises. When observed performance scores were disaggregated by exercise, small variance was isolated, and weak statistical strength between variables was observed. The CATS3 and S1 exercises were the only scales where NATs tend to vary, due to an ineffectually implemented PAU instrument.

As a summary measure, the PAU observed performance-rating instrument was found not to be a statistically valid indicator, as considerable limitations were noted in the implementation of the NATs' evaluation process. Problems using the PAU assessment as a measurement tool were anticipated prior to study implementation. The implementation of the PAU evaluation process was impacted by the ratio of instructors to the class size for some of the exercises (approximately 1:7 or higher) depending upon the number and complexity of the practical exercise. Due to these constraints, New Agents were rated only on *observed* negative-performance, thereby contributing to a skewed score distribution of near perfect scores (min = 375, max = 390, M = 386.76), contributing to the lack of variance in the observed performance data. Additionally, Trainees who

consistently scored poorly would have been removed from the program, thus further reducing the variance in the observed-performance scores.

Notwithstanding the variance issues, the PAU measure was selected for this study, as it is the only method available to evaluate NAT performance in practical exercises. All other measures functioned as envisioned, providing a range of variance thus supporting the contention that the PAU measure contributed to a lack of significant results rather than the sample.

## Recommendations for Action and Further Study

Effective training encourages a transfer of learning and application to job performance (Mullins, 1992). An academic performance evaluation process must adequately assess skills performance to determine if skill levels are developing for proper application. How NAT performance is evaluated is critical to the success of a New Agent while in training, then after they report to their field assignment. The PAU evaluation process was determined not to be a measure of what NATs can do, but rather, what an instructor *catches* them not doing correctly. The faculty of the Practical Applications Unit must reconsider the implementation process focusing on observed negative behavior. Otherwise, behavior is assumed to be acceptable even if not directly observed.

A variety of factors directly impact the implementation of the evaluation measure to include the size of the New Agent Training classes, the complexity of the practical exercises, the number of PAU instructors and other resources needed to adequately evaluate the performance of each and every NAT consistently. These constraints hamper the collection of adequate scores depicting the true performance of

each NAT. To make assumptions of successful performance based on whether poor behaviors actually were observed, limits the faculty's effectiveness in identifying Trainees who are not suitable for the job.

The implementation of the evaluation system must be modified to reflect scores specifically related to *actual* performance. Exercises must be designed to focus on specific behaviors where the Trainees may be evaluated on fewer exercises for a graded score. Exercises that do not focus on specific skills such as Safe Tactics and Reinforcement Training (START) should be removed from the overall scoring matrix. Practical exercises progressively increase in complexity and difficulty, therefore consideration should be given to using the simpler, less comprehensive exercises as practice and developmental activities. These exercises, although graded, should not be included in the overall PAU scores. Comprehensive exercises such as the Practical Exercises 1 through 4 should have opportunities to evaluate *all* Trainees at different points throughout the exercise for graded performance.

Limiting the number of exercises through which their performance is rated will allow instructors to focus on individual performance rating both positive and negative behaviors. Exercises that are not rated can be used to reinforce behaviors in various situations increasing the opportunity for instructors to coach and correct behavior before Trainee performance is scored. Minimum instructor resources can be used for those practice exercises where they can focus on observed negative behavior in observed in specific assignments to develop the NATs' skill levels along the ten behavior dimensions. The exercises deemed evaluative might need to be re-designed to have fewer stations but

more complex situations. A maximum number of instructors will be used to evaluate actual individual performance, thereby providing a more accurate reflection of performance.

Follow-up analyses indicated some observable variance in the CATS3 and S1 sub-scales. Further consideration should be given to how these exercises are implemented to determine if the protocols differ from those used in other exercises that may affect the evaluative process. The results of the additional analyses can be useful for future studies examining the trends in the relationships between critical reflection, emotional intelligence, and performance indicated.

## Future Research Concerns

This study provided empirical results that can be considered by other law enforcement organizations responsible for basic training. The predictive relationship of reflective thinking and emotional intelligence on performance was tested, producing unsubstantiated results that such relationships exist. Although the argument that both reflective thinking and emotional intelligence was not substantiated by the results of this study, additional research into the influence of these constructs on performance by law enforcement trainees is warranted to further understand how these constructs affect learning. The problem was likely not with the strength of the premise of the study, but with the tools available to study it.

The main assertion of this study has been that a potential relationship exists between both critical reflection and emotional intelligence and their performance. Although, at best, a small relationship between these constructs was evidenced in the

follow-up studies, further research is warranted to examine the influence of these two constructs in the transformation of NATs. Dewey (1938), Kegan (1994), and Mezirow (1991) argued that transformation cannot occur without reflective thought to prompt change in knowledge, beliefs, and assumptions. The level of change necessary to become a SA requires transformation prompted by a level of reflection that allows the individual to make sense of new learning to adapt behaviors needed to meet the demands of the job.

As reflection is the process by which individuals make sense of learning to respond to their environment (Kegan, 1994; Mezirow, 1991), critical reflection is stimulated when an individual is engaged in a problem-based learning environment (Lie, 2006). To perform successfully within the complexity of the practical exercises, the NATs must use the knowledge and skills learned throughout the training program, not just the tactical skills taught by the PAU faculty. It stands to reason that NATs must engage some level of critical reflection while participating in these exercises, to transfer classroom learning into performance-based activities. Further study is required to better define the relationship of critical reflection to NAT learning and performance.

Scholarship supports the argument that emotional intelligence influences behaviors and is predictive of performance (Bar-On, 2006; Cote & Miners, 2006) especially in professions like law enforcement (Daus & Ashkannasy, 2005). The influence of emotional intelligence on NAT performance cannot be understated. As

Nafukho (2009) noted,

> The strengths and weaknesses of the instruments are discussed, and it is concluded that despite the flaws in a number of studies on EI, it has been established by core researchers that EI is important in predicting performance and successful life outcomes. (p. 681)

The results of the current study and those of existing research support the need for the continued examination of the influence and predictive nature of emotional intelligence, especially in a law enforcement-learning environment.

Research into the predictive relationships between emotional intelligence and NAT performance from a perspective of self-efficacy would complement the current research by focusing on the predictive value of the NATs performance based on the perception of their own ability. Self-efficacy is an individual's judgment of one's ability to accomplish or achieve an outcome (performance) (Bandura, 1986, p.21). How individuals strive to achieve a goal is related to how they perceive their own ability to perform (Bandura, 1997b). A more accurate measure of NAT performance may reside in establishing methods to identify their perceived ability or efficacy expectations to determine their potential to achieve satisfactory levels of performance in each dimension (outcome expectations) (Bandura). NATs may understand what must be accomplished but may doubt their own abilities to perform, whereby affecting their actual performance in a given exercise situation.

In many ways, the perceived ability scores, as used in this study, reflect the NAT's level of self-efficacy in relation to their ability to perform along the ten behavior dimensions in the practical exercises. A correlational relationship was identified between

the NATs perceived ability and emotional intelligence. These relationships indicate that Trainees with high emotional intelligence tended to rate their performance at or below their actual performance rating. As the NATs also are evaluated along the six suitability dimensions indicative of emotional intelligence, the relationship between perceived ability and emotional intelligence becomes more important to understanding how NATs learn and apply their new knowledge. Even though trainees believe they can perform at certain levels, they are still required to prove their ability through these practical exercises.

Faculty may want to consider perceived ability to offer some insight into a Trainee's performance from a training standpoint. If individuals are doubtful of about their own performance and cannot not reflect on and self-assess their performance, their ability to succeed is questionable (Cassidy, 2007; Hamilton, 2005). If Trainees lack levels of self-efficacy, their performance may suffer and ultimately affect their success. If they are uncertain in the training environment, they undoubtedly will be uncertain in real situations. Additional studies into self-efficacy and NAT performance may provide better insight in accurately assessing NATs throughout the entire New Agents Training Program.

Current research supports the predictive value of emotional intelligence in identifying top performers in law enforcement (Lewis, 2010; Turner, 2006). Other research suggests that emotional intelligence is predictive of organizational performance and learning (Abraham, 1999; Beehr et al., 2001; Singh, 2006). Additional studies of FBI NATs should consider how emotional intelligence can be used in the selection process of

future SAs. This research should not be limited to studying the use of emotional intelligence to identify high performers but also how it can be used to identify which NATs have levels of emotional intelligence to succeed in the training environment.

Reflective thinking, when considered with self-efficacy, has a predictive relationship with academic performance. Critical reflection may have predictive value in a law enforcement-training environment if instructional approaches support the reflection process. However, a misalignment between teaching and learning outcomes can negatively affect learner performance (Phan, 2007). If instructional strategies do not encourage reflective thinking, learners may not engage the level of reflection needed to improve performance. Additionally, if reflective thinking is affected by the level of learning (surface or deep) the student engages to process the new knowledge (Phan, 2007). Childs (2005) argued:

> Surface-level strategies based on rote learning are 'insufficient' in developing individuals capable of 'responding and adapting' in complex and demanding situations and problem-solving abilities. Critical reflection stimulates though as well as reducing the potential for "non-learning"(patterned behavior) and "non-reflective learning"(reliance on explicit direction for learning). (p. 562)

Studying the influence of instructional strategies and learning approaches on critical reflection will support efforts to develop effective teaching approaches in the New Agents Training Program. The instructional approach in the New Agents Training classes continues to focus on surface learning. Reflective learning is not built into the New Agents Training Program curriculum. Reflection is an essential part of the learning process that allows an individual critically discern as to what is relevant, then connect

new learning with job performance (Daudelin & Hall, 1997; Fomeris & Peden-McAlpine, 2006). Future research must include an assessment of the instructional strategies used by faculty when teaching NATs the core skills formulating the foundations of the behavior dimensions measured by the problem-based learning exercises.

Educators tend to communicate subject-matter expertise through rote learning practices (Childs, 2005). These instructional approaches reinforce habitual action where the focus only on what the information at hand rather than a process of reflection to broaden the learners' scope of learning or increase the quality of the learning experience (Peltier et al., 2005; Phan, 2007). Understanding a fact is a different process than understanding the implications of that fact in a context, which is achieved through reflection. As a curriculum expert for the New Agents Training Program, I have seen these rote practices used consistently by faculty. Activities reinforcing reflective thinking must be included as a learning strategy to increase the potential for reflection and critical reflection among NATs. Further research may offer direction for faculty development the influence of instructional approaches and reflective practices within the New Agents Training Program.

## Conclusion

The importance of effective training for NATs cannot be understated. New Agents Training is the genesis of the future of the Federal Bureau of Investigation. The organizational success of the FBI is critical not only to the agency, itself, but to the American public. That success rests with the abilities of the individuals

who are selected to carry forth the mission of the FBI. The responsibility to prepare FBI NATs exceeds just providing the basics of enforcement or intelligence procedures. FBI faculty must fully understand how individuals process, learn, and apply new knowledge to be effective in the real world.

This study examined how critical reflection and emotional intelligence influence performance in a specific learning environment exclusive to the FBI. The ramifications of this research are far reaching, as the law enforcement training community must continually develop effective strategies to prepare those who dedicate themselves to protect their communities whether on a local or national level. Additional research is needed to explore further the relationship of these constructs to the learning process. The challenge for law enforcement faculty, FBI or otherwise, is not only to ensure that trainees can successfully engage in learning, but more importantly, to use their new knowledge and skills effectively when faced with solving real world problems.

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## Appendix A – New Agent Trainee Suitability Dimensions

| Dimension | Description |
|---|---|
| Conscientiousness | Includes behavior that is dependable, responsible, organized, careful, and thoughtful, with a great attention to detail and follow-through. It is the ability to systematically plan, anticipate problems, and develop contingencies to avoid these problems. It can be contrasted with behavior that is unreliable, careless, negligent, and lax. |
| Cooperativeness | Includes behavior that involves following the chain of command and being willing to collaborate with individuals in the FBI, in other law enforcement agencies, in local government, and in the community. It is closely associated with the ability to relate effectively with others and being sensitive to others' needs. It can be contrasted with behavior that disrupts the work through insubordination or uncooperative actions. |
| Emotional maturity | Includes behaviors that involve maintaining self-control and approaching potentially volatile situations, events, and people in a calm, professional manner. It is the ability to be flexible, adapt to changing situations, and remain levelheaded and effective under stress. It is contrasted with behavior that is immature, irrational, and shows a lack of control over one's behavior. |
| Initiative | Includes behavior that involves perseverance and dedication in performing the duties of the job, going above and beyond expectations to accomplish the job, making suggestions to improve work processes, performing duties without having to be told, and a willingness to put in the long hours the job requires. This is highly correlated with motivation and includes exhibiting a commendable work ethic. It can be contrasted with behavior that involves failing to do what it takes to perform the job successfully because of laziness or lack of interest. |
| Integrity | Includes behavior that shows the person to be honest, trustworthy, self-disciplined, and respectful of laws and regulations; behaviors display high standards of ethical conduct, and actions are taken without jeopardizing or compromising these standards even when there are no ramifications for not doing so. Behaviors involve following agency policy and the letter and spirit of the law, avoiding even the appearance of impropriety. |
| Judgment | Includes the ability to evaluate information, think critically, question assumptions and discern merits and deficiencies in logic, and self assess one's own skills. Behaviors indicate the ability to decide on and commit to a responsible course of action, as well as the ability to accept constructive criticism and evaluate it appropriately. |

*Note.* From *Rules, regulations, and requirements at the FBI Academy for New Agent Trainees*. Federal Bureau of Investigation, 2009. Adapted with permission from the author.

# Appendix B - Questionnaire for Reflective Thinking

This is NOT a test. The responses should reflect your *personal* reaction, and the *strength* of your reaction, as accurately as possible. Please select the appropriate letter to indicate the level of your agreement with the statements about your actions and thinking while participating in all aspects of the New Agents Training Program.

5 - Definitely agree, 4 – Agree, 3 – Unsure, 2 – Disagree, 1 - Definitely disagree

| | | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|
| **1** | When I am working on some activities, I can do them without thinking about what I am doing. | | | | | |
| **2** | The New Agents Training Program requires me to understand concepts taught by the instructors. | | | | | |
| **3** | I sometimes question the way others do something and try to think of a better way. | | | | | |
| **4** | Because of the New Agents Training Program, I have changed the way I look at myself. | | | | | |
| **5** | In the New Agents Training Program , I do things so many times that I started to do them without thinking about it. | | | | | |
| **6** | To pass the New Agents Training Program I need to understand the content. | | | | | |
| **7** | I like to think over what I have been doing and consider alternative ways of doing it. | | | | | |
| **8** | The New Agents Training Program has challenged some of my firmly held ideas. | | | | | |
| **9** | As long as I can remember handout material for examinations, I do not have to think too much. | | | | | |
| **10** | I need to understand the material taught by the instructors in order to perform practical tasks. | | | | | |
| **11** | I often reflect on my actions to see whether I could have improved on what I did. | | | | | |
| **12** | Because of the New Agents Training Program, I have changed my normal way of doing things. | | | | | |
| **13** | If I follow what the instructors say, I do not have to think too much in the New Agents Training Program. | | | | | |
| **14** | In the New Agents Training Program, I have to continually think about the material I am being taught. | | | | | |
| **15** | I often re-appraise my experience so I can learn from it and improve my performance. | | | | | |
| **16** | During the New Agents Training Program , I discovered faults in what I had previously believed to be right. | | | | | |

*Note*. From "Development of a questionnaire to measure the level of reflective thinking" by Kember, D., et al., 2000, *Assessment & Evaluation in Higher Education, 25*, 381-395. Adapted with permission.

**The wording of items within each scale**

| Item no. | Scale |
|---|---|
| | **Habitual action** |
| **1** | When I am working on some activities, I can do them without thinking about what I am doing. |
| **5** | In the New Agents Training Program, I do things so many times that I started to do them without thinking about it. |
| **9** | As long as I can remember handout material for examinations, I do not have to think too much. |
| **13** | If I follow what the instructors say, I do not have to think too much in the New Agents Training Program. |
| | **Understanding** |
| **2** | The New Agents Training Program requires me to understand concepts taught by the instructors. |
| **6** | To pass the New Agents Training Program I need to understand the content. |
| **10** | I need to understand the material taught by the instructors in order to perform practical tasks. |
| **14** | In the New Agents Training Program, I have to continually think about the material I am being taught. |
| | **Reflection** |
| **3** | I sometimes question the way others do something and try to think of a better way. |
| **7** | I like to think over what I have been doing and consider alternative ways of doing it. |
| **11** | I often reflect on my actions to see whether I could have improved on what I did. |
| **15** | I often re-appraise my experience so I can learn from it and improve my next performance. |
| | **Critical Reflection** |
| **4** | Because of the New Agents Training Program, I have changed the way I look at myself. |
| **8** | The New Agents Training Program has challenged some of my firmly held ideas. |
| **12** | Because of the New Agents Training Program, I have changed my normal way of doing things. |
| **16** | During the New Agents Training Program , I discovered faults in what I had previously believed to be right. |

*Note*. From "Development of a questionnaire to measure the level of reflective thinking," by Kember, D., et al., 2000, *Assessment & Evaluation in Higher Education, 25*, 381-395. Adapted with permission.

# Appendix C - Authorization to use the Questionnaire for Reflective Thinking



1 of 218

**Kathleen Mitchell-White** Back to Message View | Send To Printer

Date : Mon, Apr 06, 2009 07:19 PM CDT
From : **David Kember <dkember@hkucc.hku.hk>**
To : 'Kathleen Mitchell-White' <kmitchel@waldenu.edu>
Reply To : David Kember <dkember@hkucc.hku.hk>
Subject : **RE: Permission to use Questionnaire for Reflective Thinking**

Dear Kathleen,

Feel free to use it.

David

---

**From:** Kathleen Mitchell-White [mailto:kmitchel@waldenu.edu]
**Sent:** Monday, April 06, 2009 9:28 AM
**To:** dkember@hkucc.hku.hk
**Subject:** Permission to use Questionnaire for Reflective Thinking

Dear Dr. Kember:

I hope this e-mail finds you at the HKU. I am a doctoral student at Walden University in the US. I am preparing my dissertation research in reflective thinking and emotional intelligence. I learned of the Questionnaure for Reflective Thinking (QRT) (Kember et al., 2000) as I researched reflective judgment and transformational learning. I am intrigued by the instrument and the possibility of conducting quantitative research in reflective thinking and transformational learning, the focus of my dissertation. I plan on measuring reflective thinking of individuals training to become US federal law enforcement Special Agents. I am measuring the relationship between reflective thinking and emotional intelligence (through another instrument) in predicitng successful performance of these trainees during their training.

Attached is a copy of the QRT I would like to use in this research study. The QRT will be used strictly for purposes of this study only. Use of the instrument is not intended for long term use. Results of this study will be published in a dissertation and possibly a scholarly research article. My research can add to the body of research supporting the use of the QRT.

Please advise if the terms described on the attached copy of the QRT are still applicable. If you would like more information regarding this research project you can contact me at (703) 632-1976.

Thank you in advance for your consideration of this request.

Kathleen Mitchell-White
Doctoral candidate, Walden University
Richard W. Riley College of Education and Leadership,
Unit Chief, Investigative Training Unit
FBI Academy, Quantico, VA
(703) 632-1976

Kember, D., Leung, D. Y. P., Jones, A., et al. (2000). Development of a questionnaire to measure the level of reflective thinking. Assessment & Evaluation in Higher Education, 25, 381-395.

Appendix D – Emotional Quotient Inventory (Sample Questions)

# BarOn EQ-i:125™

by Dr. Reuven Bar-On

## Introduction

The EQ-i:125™ consists of statements that provide you with an opportunity to describe yourself by indicating the degree to which each statement is true of the way you feel, think, or act most of the time and in most situations. There are five possible responses to each sentence.

**1 - Very seldom or Not true of me**
**2 - Seldom true of me**
**3 - Sometimes true of me**
**4 - Often true of me**
**5 - Very often true of me or True of me**

## Instructions

Read each statement and decide which *one* of the five possible responses best describes you. Mark your choices on the answer sheet by filling in the circle containing the number that corresponds to your answer.

If a statement does not apply to you, respond in such a way that will give the best indication of how you *would* possibly feel, think, or act. Although some of the sentences may not give you all the information you would like to receive, choose the response that seems the best, even if you are not sure. There are no "right" or "wrong" answers and no "good" or "bad" choices. Answer openly and honestly by indicating how you actually are and *not* how you would like to be or how you would like to be seen. There is no time limit, but work quickly and make sure that you consider and respond to *every* statement.

1. My approach in overcoming difficulties is to move step by step.
2. It's hard for me to enjoy life.
3. I prefer a job in which I'm told pretty much what to do.
4. I know how to deal with upsetting problems.
5. I like everyone I meet.
6. I try to make my life as meaningful as I can.



*Note*. From *Emotional Quotient Inventory Test Booklet (Sample Questions)*., by R Bar-On,1997, North Tonawanda, NY: Multi-Health Systems. Reproduced with permission by author.

# Appendix E – Copy clearance letter EQ-i:125

MHS
Multi-Health Systems Inc.
www.mhs.com
*Publishers and Developers of Professional Assessment Materials*

*SENT VIA ELECTRONIC MAIL*

May 5, 2010

Direct dial: 1-800-456-3003 ext.232
E-mail: permissions@mhs.com

**Attention:** Kathleen Mitchell

***Re: Copyright Clearance Letter***

Thank you for your interest in Multi-Health Systems Inc. ("MHS") and request for the EQ-I (test). This letter provides Kathleen Mitchell (the "Party") with permission to reproduce one copy of the EQ-I (test) at no cost.

The Party will not be permitted to make additional reproductions of the EQ-I (test) without first obtaining express written permission from MHS, which may be subject to additional costs. The Party agrees to return and/or destroy the EQ-I (test) within thirty (30) days of receipt.

The Party shall not, directly or indirectly, disclose, divulge, reveal, report, publish, transfer or otherwise communicate, or use for its or his own benefit or the benefit of any other person, partnership, firm, corporation or other entity, or misuse in any way, any of the EQ-I (test) components.

Please sign and return a copy of this letter acknowledging your understanding of our relations. If you have any questions or concerns regarding the foregoing, please feel free to contact me.

We accept the arrangements outline above.

LICENSEE:

Kathleen Mitchell — 5/5/2010

Authorized Signing Representative — Date

Sincerely,
MULTI-HEALTH SYSTEMS INC.

Per: Loriann Tulk — May 5, 2010

Date

# Appendix F- 360° Perceived Ability Questionnaire

**Date: _____**
**ID Number (last 4 digits of SSAN) _____**
**New Agent Class number: _____**

**Study of the FBI New Agents Training Program.**

The information you provide in this on-line questionnaire will be kept completely confidential. The purpose is to gather information on each participant in this study to create a general profile of the respondents. Please do not provide any your name or full social security account number (SSAN). The last four (4) digits of your SSAN will serve as an identification number only for purposes of matching questionnaire responses of each participant in the study. As your participation is voluntary, you may stop at any time without penalty. However, the results of the entire study will be more useful with the complete information you provide. Thank you for your participation.

**Demographic Information**

Please select the appropriate response.

1. What is your age in years? _____

2. What is your gender?

    1. Male
    2. Female

3. What is your race? (Mark all that apply)

    1. Asian, Asian American
    2. Black, African American, African
    3. Hispanic, Latino, Mexican American
    4. Native American, American Indian, Alaskan Native
    5. White, Caucasian, European American
    6. Other (please describe) _____

4. What is your national origin (Arab, Italian, Irish, Chinese, etc)?

    _____

5. What is the highest level of formal education that you have completed?
    - ○ Undergraduate degree
    - ○ Masters degree
    - ○ Doctoral degree
    - ○ Other (Please describe type and number of years completed)
      _____

6. What was your primary field of study in formal education for your highest degree?
   _____

7. What was your prior professional employment before joining the FBI?

   - ○ Law Enforcement
   - ○ Education
   - ○ Accounting
   - ○ Law
   - ○ FBI Professional Support
   - ○ Computer Sciences or Information Technology
   - ○ Languages
   - ○ Science or Forensics
   - ○ Intelligence
   - ○ Military
   - ○ Other _____

8. If you have prior law enforcement experience, state the number of years.
   _____

9. If you have any prior military experience, state the number of years.
   _____

10. Have you received tactical training before entering New Agents Training?
    - ○ Yes
    - ○ No
    - ○ If yes, please describe if law enforcement, military, other.
      _____

**Practical Applications Perceived Ability Self-Assessment**

The following questions relate to your perceived ability when participating in the Practical Applications problem-based exercises. For each of the questions, rate what your think your overall ability is in each of these dimensions. This is strictly a self-assessment for this research project only. Your responses will NOT be used in any capacity in your official New Agents Training assessment nor will any instructor be aware of your responses. Rate your ability for the exercises (overall) according to the following rating scales:

1 - Inadequate (I am struggling and can use all the help and instruction I can get),
2 - Fair (I know what is expected but sometimes I am unsure how to apply what was learned),
3 - Average (I can apply what was learned but my performance needs improvement),
4 – Good (I perform to expectations), or
5 - Excellent (My performance exceeds expectations).

1. Firearms handling and deadly force:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

2. Safe vehicle operations:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

3. Good use of intelligence:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

4. Good planning:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

5. Superiority of personnel and firepower:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

6. Cover and concealment:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

7. Clear communications:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

8. Control of self, subjects, and environment:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

9. Continually assess the situation and adapt as necessary:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)

10. Tactical judgment:
○ Inadequate (1) ○ Fair (2) ○ Average (3) ○ Good (4) ○ Excellent (5)
Comments:

_____

_____

_____

_____

# Appendix G - Informed Consent Agreement

**Project Title: Effect of Reflective Thinking and Emotional Intelligence on problem-based learning situations. Please read the consent agreement carefully before you decide to participate in the study:**

You have been asked to participate in a research study conducted by Kathleen Mitchell, Federal Bureau of Investigation (FBI), Training Division, as part of a doctoral dissertation.
**Purpose of Study:** The purpose of this study is to identify ways to improve the performance of FBI New Agent Trainee's (NAT) performance in the Practical Applications Unit problem-based practical exercises. Your consent is required to be part of this study, which may be used for a doctoral dissertation.
**Procedures:** If you volunteer to participate in this study, you will complete the following Internet, on-line, self-assessment instruments: a demographic questionnaire, the Questionnaire for Reflective Thinking (QRT), and the Emotional Quotient Inventory (EQi). Then, your Practical Applications exercise performance scores, which are collected by the FBI for NAT assessments, will be aligned with your results on the other assessments.. The FBI has granted access to these scores, with your consent, as long as your identity is kept confidential and the results are reported in the aggregate. An FBI research and statistics expert will assist in the collection and analysis of the data collected. Confidentiality and anonymity will be maintained.
**Explanation of Potential Benefits:** You were selected as a possible participant in this study because of your assignment to a New Agents Training Class at the FBI Academy. You will not receive additional compensation (to your normal wages) if you decide to participate in this research. Your participation will not affect your status or grades within the New Agents Training Program. You will be contributing to a study to improve the quality of training provided to New Agents Trainees and the effectiveness of the FBI.
**Time Required:** The total amount of time needed to complete the demographic questionnaire, the QRT, and the EQi is approximately 25 – 35 minutes.
**Explanation of Risks:** None anticipated. The QRT and the EQi have been used in educational and management research with no harmful effects noted.
**Benefits:** This study may help us understand how to improve and support the performance of New Agent Trainees, especially in their performance in the Practical Application tactical exercises. Research in this area is of great benefit to the FBI, New Agent Trainees, and to law enforcement and the public.
**Confidentiality:** Aggregate results will only be viewed by the researcher and the FBI Senior Scientist, who will align the results from all the assessments. All information is regarded as confidential. Your results are maintained in the researcher's database, strictly on an anonymous basis. Any information that is obtained about you in connection with this study, and that can be identified with you, will remain confidential and will be disclosed only with your permission or as required by law. The questionnaires used during this research, will be the property of the FBI. If any aspect of this study is discussed with others for the purpose of teaching or designing curriculum, no identifying information will be disclosed.
**Voluntary Participation:** Your participation in this study is entirely voluntary. Whether or not you consent to complete the QRT and EQi instruments, all students are provided the same level of instruction. No instructors will be informed as the results of the study or the participation of individual students. If you volunteer to participate, you may stop at any time without consequences. You do not waive any legal claims, rights, or remedies by participating in this study.
**Contact Information:** If you have any questions or concerns about this research project, or if you choose to withdraw from the study, please notify Supervisory Special Agent Kathleen Mitchell, Unit Chief, Investigative Training Unit, FBI Academy, Quantico, VA, Building 9-B209, extension 1976. Walden University's approval number for this study is **12-10-09-0103110,** which expires on **December 10, 2010**.

Signature: _____ Date: _____

Printed Name: _____

Internet e-mail address: _____

NAC number _____ Last four digits of Social Security Number _____

Appendix H - New Agent Training Practical Applications Unit Practical Exercises

| Week/day | Hrs | Session | Synopsis |
|---|---|---|---|
| 5/3 | 4 | S-1 | The NAC is divided into ½ (Groups A and B) for this block of instruction. Trainees are divided into small teams with designated team leaders to conduct a moving surveillance of targets during the daytime. Trainees use surveillance tactics, accurate observation methods and communicate succinctly with other team members. Trainees incorporate observations into a written surveillance log. |
| 6/1-2 | 4 | S-2 | The NAC is divided into ½ (Groups A and B) for this block of instruction. Trainees continue to practice surveillance techniques while conducting a moving surveillance of targets in a night-time setting. |
| 7/4 | 10 | CATS-1 | Concepts and Tactics for Survival 1 - The NAT is introduced to basic principles of tactics, emphasizing arrests and other high-risk situations, using lectures, demonstrations, and practical exercises. Trainees receive instruction in alternatives to entry, visual clearing techniques, approaching an entry point, and room entries. |
| 8/1 | 10 | CATS-2 | Concepts and Tactics for Survival 2 - Building on concepts introduced in CATS-1, trainees are introduced to arrest plans and compliant vehicle stops. Trainees receive instruction on the tactical methods for clearing hallways and stairways, clearing danger areas through team room clears, and executing compliant vehicle stops. |
| 8/3 | 10 | CATS-3 | Concepts and Tactics for Survival 3 - The NAT is introduced to site surveys and breaching techniques as well as reviews of compliant vehicle stops and interior tactics. Trainees receive further instruction and practical application on the tactical methods for clearing hallways and stairways, clearing danger areas through team clears, and executing compliant vehicle stops. |
| 9/2 | 4 | P-1 | Trainees have previously been given team assignments and team leaders identified to affect an arrest of a subject who is not known to armed and dangerous. Each team leader will prepare a written operations order with relevant contingencies after a review of all available intelligence and completing a site survey. Team leaders orally brief the arrest team and then safely execute the arrest plan with the arrest team. |
| 9/4 | 4 | START | Safe Tactics and Reinforcement Training will cover proper procedures on observed failures or short-comings from the P-1 exercise and will further help the trainees understand and prepare for future exercises. Trainees are afforded the time to practice tactics already introduced and to ask questions relative to the P-1 |

| Week/day | Hrs | Session | Synopsis |
|---|---|---|---|
| | | | exercise. |
| 11/4 | 4 | P-2 | This practical provides trainees with the opportunity to arrest subjects known to be armed and dangerous. The exercise builds on previous lectures and exercises to emphasize safety, tactics, and written/oral planning. Each team leader will prepare a written operations order with relevant contingencies after a review of all available intelligence and completing a site survey. Team leaders orally brief the arrest team and then safely execute the arrest plan with the arrest team. |
| 12/4 | 4 | PAINT GUN #1/ | Trainees are introduced to simmunition training (paint guns) and receive a safety brief on this topic. Trainees have the opportunity to assess, in a realistic manner, their tactical knowledge, skills, and abilities during simmunition supported exercises. These exercises include safe execution of arrests and building clears as well as compliant vehicle stops. |
| 12/5 | 4 | PAINT GUN #2 | Trainees are introduced to simmunition training (paint guns) and receive a safety brief on this topic. Trainees have the opportunity to assess, in a realistic manner, their tactical knowledge, skills, and abilities during simmunition supported exercises. These exercises include safe execution of arrests and building clears as well as compliant vehicle stops. |
| 13/3 | 4 | P-3 | During this exercise, the trainees are divided into small working groups (typically two person teams) and tasked with brief investigative scenarios. Trainees are required to assess and safely resolve potentially critical issues using sound judgment. |
| 14/4 | 4 | P-4 | During this exercise, the trainees are divided into small working groups (typically two person teams) and participate in investigative situations based on real life agent experiences. Trainees are required to assess and safely resolve critical issues using sound judgment. |
| 15/4 | 2 | CATS-4 | Concepts and Tactics for Survival 4 - Trainees further review and reinforce tactical skills and abilities through the use of simmunition drills. Trainees will also review actual critical shooting incidents that will provide insight into tactical issues encountered by law enforcement officers. |

Note. From *Practical Applications Unit New Agents Training Instructors Manual (IPAT),* by Federal Bureau of Investigation, 2008. Reprinted with permission from author.

Appendix I – Sample E-mail Notification sent to Participants

**Thank you for your participation in the research study of the FBI New Agents Training Program.**

You will receive a series of e-mails with links to three separate questionnaires: The Demographic/360 Ability Questionnaire, the Questionnaire for Reflective Thinking, and the Emotional Quotient Inventory (EQ-i). You will access each survey separately. You should be able to complete all three surveys within 25-30 total minutes.

This e-mail provides the access to the Questionnaire for Reflective Thinking. Please click on the following link to complete the questionnaire FBI New Agents Training Questionnaire for Reflective Thinking 9.20.

This link is unique to you. Please do not forward it. DO NOT provide any identifying information on the survey other than the information requested. Please click on the following link Remove from list to remove your email address to ensure anonymity.

If you have any questions regarding this questionnaire, contact SSA Kathleen Mitchell at kmitchell@fbiacademy.edu.

Appendix J: Practical Applications Evaluation - Rating Scales

## 1. Firearms Handling and Deadly Force

| 1<br>**Fails to Meet Expectations** | 2<br>**Needs Improvement to Meet Future Training Requirements** | 3<br>**Meets Expectations** |
|---|---|---|
| Lacks muzzle discipline (e.g., points muzzle at teammate or instructor)<br><br>Improper handling , transporting, or loading of weapon (e.g., rests finger on trigger, unable to resolve malfunction, weapon drawn when interviewing, leaves weapon unsecured)<br><br>Violates deadly force policy<br><br>Accidentally discharges weapon<br><br>Commits multiple weapon handling mistakes or does not demonstrate learning/repeats weapon handling mistakes after receiving feedback | Unable to articulate reason for shooting | Demonstrates muzzle discipline<br><br>Properly handles, transports, and reloads weapon (e.g., resolves malfunctions, transports in holster, draws weapon properly, makes subject's weapon safe)<br><br>Adheres to deadly force policy<br><br>Demonstrates learning and corrects behavior after receiving feedback |

## 2. Safe Vehicle Operation

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Commits repeated moving violations (e.g., drives in excess of 15 mph, drives through stop sign, etc)<br><br>Lacks control of the vehicle, endangers others<br><br>Stopped by law enforcement for cause or has an at-fault accident<br><br>Commits multiple mistakes or does not demonstrate learning/repeats mistakes after receiving feedback | Has an occasional moving violation (minor infraction)<br><br>Has control of the vehicle in most situations but not in others (e.g., precision driving, multiple vehicle maneuvers)<br><br>Recognizes the need for safe vehicle operations, but execution needs improvement | Obeys all traffic laws<br><br>Has control of vehicle<br><br>Demonstrates learning and corrects behavior after receiving feedback |

## 3. Good Intelligence

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Fails to utilize available intelligence<br><br>Fails to obtain or obtains inadequate intelligence; does not draw upon appropriate available methods (e.g., site survey, surveillance, appropriate interviews, etc.)<br><br>Commits multiple mistakes or does not demonstrate learning/repeats mistakes after receiving feedback | Makes marginal use of available intelligence<br><br>Obtains some intelligence about the subject or the potential arrest site, but information is sparse or key information is missing; draws upon some methods (e.g., conducts a site survey), but requires more to meet expectations<br><br>Recognizes the need for good intelligence, but execution needs improvement | Obtains intelligence about the subject, the subject's associates, and the potential arrest site; uses appropriate methods to gather intelligence<br><br>Effectively uses intelligence obtained<br><br>Demonstrates learning and corrects behavior after receiving feedback |

## 4. Good Planning

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Plan is too complicated, confusing/disorganized, or leaves out crucial information; others have great difficulty understanding the plan, are confused and multiple questions provide little clarification | Recognizes the need for good planning, but execution needs improvement (e.g., plan is somewhat complicated or confusing; others have difficulty following and have many clarifying questions) | Demonstrates solid planning; plan is simple, organized (SMEAC) and straightforward; ensures the plan is understood (i.e., conducts a brief-back) |
| Fails to brief deadly force policy | Paraphrases deadly force policy rather than reading it verbatim | Briefs deadly force policy |
| Fails to think through choices or contingencies, or falls victim to excessive "what if" | Fails to conduct brief-back | Conducts brief-back |
| Plan increases or does not minimize risk (e.g., chooses dynamic entry when slow and methodical is more appropriate) | Fails to fully develop contingencies | Develops/thinks through choices and contingencies |
| Commits multiple mistakes or does not demonstrate learning/repeats mistakes after receiving feedback | Plan does not go far enough to minimize risk | Plan minimizes risk |
| | | Demonstrates learning and corrects behavior after receiving feedback |

## 5. Superiority of Personnel and Firepower

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Accepts less than a 2:1 ratio of agents to subjects when an alternative exists to have 2:1 ratio | Hesitates to request assistance | Maintains a minimum ratio of 2:1 (agents to subjects) or greater |
| Fails to request assistance when necessary | Recognizes the need for superiority of personnel and firepower, but execution needs improvement | Requests assistance when necessary |
| Commits multiple errors or does not demonstrate learning/repeats mistakes after receiving feedback | | Demonstrates learning and corrects behavior after receiving feedback |

## 6. Cover and Concealment

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Fails to utilize cover or concealment properly (e.g. leads with feet in slice-the-pie, is seen or shot, searches a subject in the open)<br><br>Fails to utilize mobile cover properly (e.g., ballistic shield, rolling bunker)<br><br>Leaves position of cover inappropriately (e.g., before area is cleared, to handle a subject)<br><br>Commits multiple errors or does not demonstrate learning/repeats mistakes after receiving feedback | Recognizes the need for cover or concealment but execution needs improvement (e.g., does not make the most appropriate choice for the situation, not completely behind cover)<br><br>Makes some changes after receiving feedback but still needs improvement | Properly identifies and utilizes cover and concealment (e.g., minimizes exposure, searches subject in appropriate position)<br><br>Properly utilizes mobile cover (e.g., ballistic shield, rolling bunker)<br><br>Maintains position of cover appropriately (e.g., until area is cleared, calls subject back to self)<br><br>Demonstrates learning and corrects behavior after receiving feedback |

## 7. Clear Communications

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Fails to communicate clearly, talks too little or too much (e.g., useless information) or hesitates to communicate with others<br><br>Fails to use methods appropriate to the situation (e.g., verbalizations give away the tactical advantage)<br><br>Commits multiple errors or does not demonstrate learning/repeats mistakes after receiving feedback | Recognizes when communication is needed and provides some communication to agents, but does not relay enough information, uses too many words, is misunderstood by some<br><br>Makes some changes after receiving feedback but still needs improvement | Communicates clearly and concisely with others; utilizes methods appropriate to the situation (e.g., verbal, visual, physical)<br><br>Demonstrates learning and corrects behavior after receiving feedback |

## 8. Control of Self, Subjects, and Environment

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Is not prepared mentally or physically to do the job (e.g., lacks confidence, hesitates), demonstrates "deer in headlights", "circular fear", over- or under-use of force in threatening situations, lacks or fails to maintain professional demeanor and attitude<br><br>Fails to establish or maintain physical or verbal control of the subject (e.g., hesitates/freezes when subject is non-compliant, subject walks away or overpowers, subject is in control)<br><br>Fails to establish or maintain visual control of the arrest environment (e.g. leaves area of responsibility, is distracted)<br><br>Fails to establish and maintain adequate tactical overwatch of others (e.g., rear security during vehicle stop)<br><br>Fails to apply defensive tactics properly (e.g., fails to conduct high risk search, fails to double lock handcuffs, etc.)<br><br>Commits multiple errors or does not demonstrate learning/repeats mistakes after receiving feedback | Is generally mentally and physically prepared to do the job, recognizes the need to control the subject and environment but execution requires improvement<br><br>Makes some changes after receiving feedback but still needs improvement | Consistently prepared mentally and physically to do the job (e.g., confident, sure), maintains appropriate demeanor and use of force in threatening situations; maintains professional demeanor and attitude<br><br>Consistently has physical and verbal control of the subject (e.g., subject follows commands; handles non-compliant subject)<br><br>Consistently has control or visual control of the arrest environment (e.g., maintains area of responsibility)<br><br>Consistently maintains adequate tactical overwatch of others (e.g., rear security during vehicle stop)<br><br>Consistently applies defensive tactics properly (e.g., conducts high risk searches, double locks handcuffs, etc.)<br><br>Demonstrates learning and corrects behavior after receiving feedback |

## 9. Continually Assess the Situation and Adapt as Necessary

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Fails to continually assess the situation or recognize situational factors that warrant a change of course of action (e.g., demonstrates tunnel vision, inappropriately stays with the original plan, unaware of cross-fire situations)<br><br>Unable to adapt to changing circumstances, situation moves faster than he/she can think and react, unable to think on the fly or handle the unexpected (e.g., new vehicles or people enter the scene)<br><br>Commits multiple errors or does not demonstrate learning/repeats mistakes after receiving feedback | Recognizes the situation is changing and the need to adapt, but execution needs improvement or choices are not the most appropriate to the situation<br><br>Makes some changes after receiving feedback but still needs improvement | Continually assesses the situation and recognizes situational factors that warrant a change of course of action (e.g. changes the tactical plan appropriately as the situation changes)<br><br>Able to appropriately react to fast moving situations and think on the fly; able to adapt and handle the unexpected (e.g., new vehicles or people enter the scene)<br><br>Demonstrates learning and corrects behavior after receiving feedback |

## 10. Tactical Judgment

| 1<br>Fails to Meet Expectations | 2<br>Needs Improvement to Meet Future Training Requirements | 3<br>Meets Expectations |
|---|---|---|
| Fails to apply visual clearing techniques or chooses a technique inappropriate to the situation (e.g., mirror, quick peek, enters an uncleared area)<br><br>Makes inappropriate entry decisions or uses inappropriate alternative (e.g., chooses to enter rather than call out a dangerous subject, chooses inappropriate entry point), fails to use proper positioning of people or vehicles<br><br>Movements are hesitant, too fast, or uncontrolled during room entry (e.g., stops in doorway/fatal funnel area, must be coaxed or directed/pushed by others to act)<br><br>Unable to explain or justify tactical choices or explanation/justification is insufficient or incorrect<br><br>Fails to conform to legal policies (e.g., fails to wait required time period after knock and announce, fails to establish probable cause prior to entering third-party premise, etc.)<br><br>Commits multiple errors or does not demonstrate learning/repeats mistakes after receiving feedback | Recognizes the need for tactics, but execution needs improvement (e.g., moves somewhat too fast or too slow) or tactical choices are not the most appropriate to the situation (e.g., loads a hallway with extraneous personnel)<br><br>Makes some changes after receiving feedback but still needs improvement | Applies visual clearing prior to entering an environment and visual technique is appropriate to the situation<br><br>Makes appropriate entry decision or uses appropriate alternative (e.g., calls out a dangerous subject rather than entry), uses proper positions of people or vehicles<br><br>Movement is smooth, confident, and controlled during room entry (e.g., quickly moves through doorway/fatal funnel)<br><br>Able to explain and provide sound justification for tactical choices<br><br>Demonstrates learning and corrects behavior after receiving feedback<br><br>Conforms to legal policies (e.g., waits required time period after knock and announce, establishes probable cause prior to entering third-party premise, etc.) |

Federal Bureau of Investigation. (2008). *Practical Applications Unit New Agents Training Instructors Manual (IPAT)*. Practical Applications Unit, FBI Academy. Quantico, VA: Author. Reprinted with permission.

CURRICULUM VITAE

# Kathleen Mitchell-White

## *EDUCATION*

2010 **Doctor of Philosophy (Ph.D.), Education (in progress)**
Walden University
Richard W. Riley College of Education and Leadership
Minneapolis, Minnesota

2002 **Master of Education (M.Ed.), Adult Education**
University of Virginia
Curry School of Education
Charlottesville, Virginia

1999 **Master of Science (M.S.) in Administration**
**Criminal Justice Administration**
Lynn University
Boca Raton, Florida

1986 **Bachelor of Science (B.S.), Communications and Criminal Justice**
Colorado State University
Fort Collins, Colorado

## *LAW ENFORCEMENT EMPLOYMENT EXPERIENCE*

1989-Present **Federal Bureau of Investigation (FBI) (May 8, 1989 – Present)**
**Special Agent Investigator, Supervisor, Executive Manager**

2007 – present **Unit Chief, Investigative Training Unit, FBI Academy, Quantico, Virginia**
Leader of team of 30 Supervisory Special Agents and Professional Support instructors responsible for teaching New Agent Trainees, Intelligence Analysts, National Academy Executives, FBI workforce, international, federal, state, and local law enforcement officials.

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| 2007 – 2009 | **Committee Chair FBI New Agent Training Program Curriculum Committee**.<br>Lead a team of 100 designers, instructors, and subject-matter experts to complete re-design of the 20-week New Agent Training Program of 25 complex core competency areas. Developed an integrated and interactive curriculum through a comprehensive instructional systems design approach. |
| 2004 – Present | **Executive Program Creator and Manager**<br>**FBI Instructor and Faculty Development Program**<br>Lead the management of program designed to teach subject-matter experts how to teach. The program also focuses on developing the competencies of the full-time FBI Academy faculty. Created the original curriculum of the FBI Instructor Development Course to teach subject matter experts interactive strategies and curriculum design. Internationally recognized program in the law enforcement and intelligence communities. |
| 2002 – Present | **Curriculum and Program Designer**<br>Created various educational and training programs for the FBI, law enforcement, and intelligence entities to include the re-design of the 20-weekNew Agents Training Program curriculum; the creation of a 10-week National Academy Police Executive School, Educational Leadership Course, accredited through the University of Virginia; the creation of the FBI Instructor and Faculty Development Program; the design and development of the State and Local Anti-terrorism Training; and Human Source Development Intelligence Courses |
| 2006 – 2007 | **Unit Chief, Regional Training and Development Unit, FBI Academy, Quantico, Virginia**<br>Established a new unit based on my original proposal to implement a permanent entity dedicated to faculty and instructor development and field and police training. |
| 2004 – 2006 | **Supervisory Special Agent, Enterprise-wide and Strategic Training Unit, FBI Academy, Quantico, Virginia**<br>Created the FBI Instructor and Faculty Development Program. Responsible for the development of all FBI |

instructors and certifying instructor in international, state, and local law enforcement and intelligence agencies.

2003 – 2004 **Supervisory Special Agent, Field and Police Training Unit, FBI Academy, Quantico, Virginia**
FBI representative to the Federal Law Enforcement Training Accreditation (FLETA) Board as original member involved in the design and implementation of the original FLETA standards and accreditation program. Original FLETA Accreditation Program Manager for the FBI Academy

2002 - 2003 **Supervisory Special Agent, Media and Technology Unit, FBI Academy, Quantico, Virginia**
An initial developer of the FBI Virtual Academy Learning Management System

1999 – 2002 **Supervisory Special Agent, Professional Development Unit, FBI Academy, Quantico, Virginia**
Program Manager and original architect of the first Continuing Education Program (CEP) for all FBI employees.

1997 – 1999 **Supervisory Special Agent, Miami, Florida**
Lead the Bank Fraud and Governmental Fraud Squad of 12 Special Agents. Responsible for the management of the squad, investigative functions, personnel, and administrative requirements.

1991 – 1999 **Special Agent, Miami, Florida**
Investigated violations of Federal laws to include complex white-collar investigations to include bank fraud, bank embezzlements, health care fraud, mortgage fraud, bankruptcy fraud, public corruption, and identity thefts. Used complex investigative techniques to include wiretaps, pen registers, domestic and international operations. Assigned as a communications officer for the Miami FBI SWAT team, 1996- 1999.

1989 – 1991 **Resident Special Agent, Johnson City, Tennessee**
Investigated violations of Federal laws to include complex white-collar investigations to include health care fraud, mortgage fraud, bankruptcy fraud, public corruption, and

identity thefts. Investigated violent crimes to include bank robbery, extortion, and kidnapping. Used complex investigative techniques to include wiretaps, pen registers, domestic and international operations.

1979 – 1989 **Loveland Police Department, Loveland Colorado**
Shift Supervisor (1987 – 1989)
Sexual Assault Investigative Program Originator and Coordinator (1985 – 1989)
CALEA Accreditation Manager (1986 – 1987)
Sexual Assault Investigator (1983 – 1989)
Patrol Officer (1979 – 1986)

1975 – 1979 **Broward Sheriffs Office, Fort Lauderdale, Florida**
Reserve Deputy: Patrol and Fort Lauderdale International Airport Communications Officer

## *ACADEMIC EMPLOYMENT EXPERIENCE*

2004 – Present **University of Virginia**
Charlottesville, Virginia
Course Developer/Adjunct Faculty
Develop and instruct undergraduate- and graduate-level academic training courses in educational leadership for FBI National Academy students at the FBI Academy, Quantico, Virginia, as part of FBI employment.

2006-2007 **Colorado Technical Online College (**Online Campus)
Adjunct Online Faculty
Instructed online undergraduate academic courses in Criminal Justice Administration, to include introduction to criminal justice, introduction to policing and criminology.
Introduction to Criminal Justice
Introduction to Police Procedures
Introduction to Police Management

## *CERTIFICATIONS*

September 2008 **Certified Emotional Intelligence Administrator for the Bar-On Emotional Quotient Instrument (EQi and EQi: 360),**
Multi-Health Systems, Inc.
Toronto, Canada

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| February 2008 | **Certified Case Method Instructor/Designer**<br>Intelligence Community Case Method Program<br>Center for the Study of Intelligence<br>Washington, D.C |
| October 2005 | **Certified Distance Learning Instructor and Curriculum Designer**<br>e-Learning Innovations Academy<br>Tulsa, Oklahoma |
| June 2004 | **Certified FBI Advanced Instructor Development Instructor**<br>FBI Academy<br>Quantico, Virginia |
| May 2003 | **Certified Instructor State and Local Anti-Terrorism Training** (SLATT)<br>Bureau of Justice Assistance<br>Washington D.C. |
| April 2003 | **Accreditation Manager and Assessor**<br>Federal Law Enforcement Training Accreditation (FLETA)<br>Brunswick, Georgia |
| February 2002 | **Certified On-line Instructional Developer**<br>Walden Institute<br>Minneapolis, Minnesota |
| January 2001 | **Certified Curriculum Designer**<br>University of Virginia<br>Charlottesville, Virginia |
| January 2000 | **Certified FBI Interview and Interrogation Expert**<br>FBI Academy<br>Quantico, Virginia |
| April 1994 | **Certified FBI Instructor**<br>FBI Miami Division<br>Miami, Florida |

## *SPECIAL ACHIEVEMENTS*

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| September 2009 | Established the INTERPOL Instructor Development Program<br>Created original curriculum for Basic Instructor Development and |

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| | Advanced Instructor Training for INTERPOL Headquarters, Lyon, France based on the FBI Instructor and Faculty development model. First-of-its-kind program established for international instructors. |
| July 2007 | HUMINT Development Course - Established a specialized 6-week program to train FBI Special Agents in Intelligence collection using specialized techniques in confidential human source development. Recognized by the law enforcement and intelligence community as excellent training created in this field to date. |
| March 2004 | FBI Instructor Development Program – Created the original program designed to teach law enforcement and intelligence instructors in effective interactive teaching strategies. Program is recognized internationally as a leading program in instructor development. |
| November 2005 | Joint Terrorism Task Force Training (JTTF) – Created the first JTTF training for FBI and law enforcement officers working together to combat terrorism throughout the United States. Designed a 3-day JTTF Train-the-Trainer course to prepare others to teach the JTTF curriculum. |
| April 2003 | State and Local Anti-Terrorism Training (SLATT) - Created the first SLATT training to provide the basics in counterterrorism training law enforcement officers throughout the United States. Designed a 3-day SLATT Train-the-Trainer course to prepare adjunct instructors to teach the SLATT curriculum. |
| October 2000 | FBI Continuing Education Program - Created and implemented the first continuing education program for all FBI employees. Established organizational policy mandating the completion of continuing education hours and credits of all FBI employees each year to meet performance appraisal requirements. |

## ***HONORS & AWARDS***

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| 2010 | Nominated – <u>Excellence in Management</u><br>Federal Bureau of Investigations Director's Award<br>Demonstrated exemplary leadership skills that motivated and inspired others to accomplish a variety of critical initiatives, served as a role model, and demonstrated dedication and commitment to furthering the mission of the FBI. |

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| 2009 | Recipient - Excellence in Leadership Award,<br>Federal Bureau of Investigations Training Division<br>Demonstrated exemplary leadership skills that motivated and inspired others to accomplish a variety of critical initiatives, served as a role model, and demonstrated dedication and commitment to furthering the mission of the FBI. |
| 2009 | Recipient – Excellence in Collaboration Award<br>Federal Bureau of Investigations Training Division<br>Lead the team effort that demonstrated exemplary leadership skills in creating a state-of-the-art curriculum to teach the New Agent Trainees |
| 2009 | Nominated – Excellence in Specialized Achievement<br>Federal Bureau of Investigations Director's Award<br>Lead the team effort that demonstrated exemplary skills in creating an integrated 20-week curriculum for New Agent Trainees. |
| 2009 | Nominated - Excellence in Specialized Achievement<br>United States Attorney General Award<br>Lead the team effort that demonstrated exemplary skills in creating an integrated 20-week curriculum for New Agent Trainees. |
| 1998 | Recipient - Award for Academic Excellence,<br>Criminal Justice Administration Graduate Program<br>Lynn University, Boca Raton, Florida |
| 1997 | Recipient - Law Enforcement Officer of the Year,<br>United States Attorneys Office, Miami, Florida<br>Complex White Collar Crime Investigation |
| 1995 | Recipient - Law Enforcement Officer of the Year,<br>United States Attorneys Office, Miami, Florida<br>Complex White Collar Crime Investigation |

***EXTERNAL TEACHING EXPERIENCE***

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| November 2009 | Australian Institute of Police Management<br>Manly, New South Wales, Australia<br>Executive Syndicate Leader and Educational Advisor |
| July 2005 | National Law Enforcement Exploring Leadership Academy<br>FBI Academy, Quantico, Virginia<br>Counselor and Team Advisor |

*WORKPLACE LEARNING EXPERIENCE*

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| 2004 - 2010 | FBI Instructor Development Courses<br>Executive Program Director and Instructor<br>Quantico, Virginia<br>Various locations throughout the United States<br>London, England<br>Lyon, France |
| 2005 - 2010 | FBI Advanced Instructor Certification and Re-certification Courses<br>Executive Program Director and Instructor<br>Jacksonville, Florida<br>Columbia, South Carolina<br>San Diego, California<br>Atlanta, Georgia<br>New Orleans, LA<br>Denver, Colorado<br>Milwaukee, Wisconsin<br>Salt Lake City, Utah |
| April, 2005 | FBI Legal Attaché Conference South Pacific Region<br>Executive Briefing and Presentation Skills<br>Brisbane, Australia |

***CONFERENCE PRESENTATIONS***

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| April 2010 | *Leadership Styles and Emotional Intelligence*<br>Florida Executive Development School (FEDS)<br>Florida Association of Chiefs of Police<br>Jacksonville, Florida |
| April 2010 | *Predictive Value of Reflective Thinking and Emotional Intelligence on Problem-Based Exercises for FBI New Agent Trainees*<br>Behavioral Science Research Conference<br>Federal Bureau of Investigation<br>Fredericksburg, Virginia |
| December 2009 | *Emotional Intelligence and Law Enforcement Officers*<br>Australian Institute of Police Management<br>Australian Federal Police<br>Manly, New South Wales, Australia |

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| July 2009 | *Transformational Leadership and Emotional Intelligence*<br>Executive Leadership Conference<br>Southern Region Command College<br>University of Mississippi, Oxford, Mississippi |
| December 2009 | *Leading different Generations for Law Enforcement Executives*<br>Executive Leadership Conference<br>Western Region Command College<br>Las Vegas, Nevada |
| July 2008 | *Leading different Generations for Law Enforcement Executives*<br>National Academy Executive Development Conference<br>West Palm Beach, Florida |
| March 2008 | *Leadership Styles and Generational Differences for Law Enforcement Executives*<br>Executive Leadership Conference<br>New Jersey Police Chiefs Association |
| October 2007 | *Organizational Leadership*<br>Middlesex County Executive Development Conference<br>Middlesex County, New Jersey Law Enforcement Academy |
| March 2007 | *Leading different Generations for Law Enforcement Executives*<br>Women in Law Enforcement Conference<br>Nova Southeastern University Criminal Justice Institute<br>Fort Lauderdale, Florida |
| October 2006 | *Leadership Styles and Generational Differences for Law Enforcement Executives*<br>Middlesex County Executive Development Conference<br>Middlesex County, New Jersey Law Enforcement Academy |

## ***PROFESSIONAL EDUCATION COURSES***

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| April 2008 | Kellogg School of Management<br>Northwestern University, Chicago, Illinois<br>Leading Strategic Change |
| September 2008 | American Management Association<br>Advanced Executive Leadership<br>Atlanta, Georgia |

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| July 2008 | American Management Association<br>Successfully Managing People<br>Arlington, Virginia |
| May 2007 | Northeastern University<br>The Emerging Executive<br>Boston, Massachusetts |

## *PROFESSIONAL ORGANIZATIONS*

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| March 2010 | Futures Working Group/Society of Police Futures<br>Federal Bureau of Investigation/University of Central Florida |
| December 2009 | Kappa Delta Pi<br>International Honor Society in Education<br>Inaugural Member Alpha Epsilon Xi Chapter<br>Walden University |