

ABSTRACT

ROSS, ERICA, M. An Examination of the Individual and Work Environment Factors Impacting Transfer of Training among North Carolina Probation Officers. (Under the direction of Dr. James E. Bartlett II).

Organizations spend billions of dollars each year on training and development to ensure their employees have the knowledge and skills to effectively perform their job duties. However; without effective evaluation of training programs, organizations cannot effectively assess if training actually results in transfer to the job; and subsequently a return on their investment. Probation officers are required to undergo mandatory in- service training hours each year to maintain the necessary knowledge and skills to effectively and safely perform their job duties; but there is no known research evaluating if officers actually transfer these skills back to the job. Using the Learning Transfer System Inventory (LTSI), the purpose of this study was to identify the factors impacting transfer of training and examine the relationship of individual and work environment factors on transfer of training among North Carolina probation officers. Participants included 377 certified probation officers with job titles as Chief probation officer, probation/ parole officer II, and field training specialists. Participants provided data on perceived transfer for Control, Restraint, and Defensive Tactics training and training in general. Descriptive statistics, bivariate correlations, and multiple regression analysis revealed statistically significant relationships among 11 of the 12 transfer factors evaluated. Performance self- efficacy, transfer- effort performance, motivation to transfer, supervisor support, resistance to change and performance coaching were significant predictors of transfer for probation officers in North Carolina. Additional demographic variables of age, tenure, and degree type were not significant predictors of transfer.

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An Examination of the Individual and Work Environment Factors Impacting Transfer of
Training among North Carolina Probation Officers

by
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DEDICATION

This dissertation is dedicated to my family and friends who encouraged and supported me throughout this process. I would like to extend a special dedication to my daughter Ja'elle and fiancé who sacrificed time with me to ensure I completed this journey. Without your understanding and support, this body of work would not be possible.

BIOGRAPHY

Erica Ross was born in Mt. Holly, North Carolina. She received her undergraduate degree from the University of North Carolina at Chapel Hill in Public Policy Analysis with a specialization in Criminal Justice Policy. After graduation, she worked full time as a Probation/ Parole officer in Mecklenburg County while completing her Masters of Science Degree in Criminal Justice from the University of North Carolina at Charlotte. During this time, she also received her North Carolina Criminal Justice Instructor Certification and performed numerous in- service trainings for probation/ parole officers. This experience led her to teaching and her current position as Criminal Justice Instructor and Public Services Department Chair at Cleveland Community College in Shelby, North Carolina.

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CHAPTER 1: INTRODUCTION

Training is an essential element in every organization to ensure that their staff meet the required duties and responsibilities on a continuous basis. “Training and development activities allow organizations to adapt, compete, excel, innovate, produce, be safe, improve service, and reach goals.” (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012, p. 74) Swanson and Holton (2001), defined training and development “as a process of systematically developing work-related knowledge and expertise in people for the purpose of improving performance” (p. 204). Every organization is interested in improving the efficiency and performance of its employees in order to remain effective and competitive.

Today, more than ever, as a result of challenging economic times and globalization, organizations look to training to remain competitive, improve employee performance, and meet organizational goals as a way to ensure effectiveness (Broad & Newstrom, 1992). In 2012, United States organizations spent an estimated \$1,195 per employee (\$164.2 billion) on training and development (ATD Staff, 2013), and this expenditure is continuously increasing over time as an estimated \$1,208 per employee in 2014 was allocated for training and development (Miller, 2014). Ho (2016), reports expenditure per employee as reported in the Association of Talent Development’s 2016 State of the Industry report increased from \$1,068 in 2008 to \$1,252 in 2015. However, training alone does not result in improved performance. For training to be effective, it is essential that employees apply the knowledge gained from training to their workplace duties. In the field of Human Resource Development (HRD), and specifically in training and development, a major concern in the literature has been the failure of employees to apply training to the work setting (Ford & Weissbein, 1997). Past estimates reported that less

than 10% of the money spent on training and development results in improved work performance (Baldwin & Ford, 1988; Merriam & Leahy, 2005). Without application of the knowledge learned in training, organizations risk spending mass amounts of money only to see very little return on their investments (Broad & Newstrom, 1992). In order for training to be effective and beneficial, organizations must ensure transfer of training to the workplace.

The study of training transfer is vital to all fields investing in training and development of employees. Broad and Newstrom (1992) argued there is no training situation in which there is not a transfer problem. Without evaluations on the effectiveness of training and proactive identification of transfer problems and barriers, companies are left without any real data on the effectiveness of training and unable to calculate a return on investment (Broad and Newstrom, 1992). Much of the transfer literature has focused on industrial and management companies with little attention paid to sectors such as the law enforcement, corrections, and human services fields (Clark, 2002) where the costs of ineffective training can be much more than monetary, including threats to public safety and continued overcrowding of prisons. Probation officers supervise thousands of convicted offenders every year and training is a vital component to the effective management of high-risk caseloads (North Carolina Department of Public Safety [NCDPS], 2015). Public Safety departments require numerous hours of training each year, but little research has evaluated what factors actually affect a probation officer transferring the learned skills to the job. Evaluations of these trainings are needed to identify any issues or barriers to transfer.

This chapter includes an overview of transfer of training and provides a context for the study of probation officer training. Additionally, the chapter provides an overview of probation

officer standards and training requirements in North Carolina. Next, a discussion of the problem is provided followed by the purpose of this research. Theoretical frameworks supporting transfer of training is also provided along with the conceptual framework for this study. Specific research questions guiding this study are outlined followed by a discussion of the significance of the study, limitations, delimitations, and definition of terms.

Transfer of Training

Transfer of training has been defined as “the effective and continuing application, by trainees to their jobs, of the knowledge and skills gained in training-- both on and off the job” (Broad & Newstrom, 1992, p. 6). Transfer of training that leads to improved work performance does not happen in a vacuum and is dependent upon a variety of factors drawn from a vast amount of research on training transfer (Donovan, Hannigan, & Crowe, 2001). Most often cited, Baldwin and Ford’s (1988) model on transfer of training outlines the factors believed to affect transfer of training and includes variables on training inputs (trainee characteristics, training design, and work environment), training outputs (acquired knowledge and skills from training), and conditions of transfer such as application of acquired knowledge and skills to the job setting and maintenance over time (Blume, Ford, Baldwin, & Huang, 2010; Ford & Weissbein, 1997; Merriam & Leahy, 2005). Further research expounded upon this model, and identified and included additional factors such as ability, motivation, individual differences, prior experience with the transfer system, learner and organizational interventions, and training content and design as additional characteristics affecting learning and transfer (Holton, 1996, 2005; Holton & Baldwin, 2003). A core assumption of transfer of training is that it is a function of a complex system of multiple influences that include all factors in the person, training, and organization that

influences transfer (Holton & Baldwin, 2003, Holton, Bates, & Ruona, 2000). Holton (1996) introduced both motivation to transfer and the work environment as mediating factors to actual transfer of training. Holton, Bates, Seyler, and Carvalho (1997) further concluded the transfer climate to be a mediating factor. The transfer climate, as defined, referred to individual perceptions and group interpretations of factors affecting successful transfer (Rouiller & Goldstein, 1993). The learning transfer system inventory (LTSI) introduced by Bates and Holton incorporated all aspects of transfer and measures factors impacting transfer (Bates & Holton, 2004). The LTSI, based upon the work of Noe (1986), was created in response to Baldwin and Ford's (1988) diagnosis of the criterion problem in evaluating and measuring transfer constructs and includes a set of 16 factors that influence transfer (Holton et al., 2000). Numerous studies used the LTSI and concluded it to have both construct and criterion related validity (Bates & Holton, 2004). The validity and use of the LTSI in transfer of training studies is discussed in more detail in Chapter 3.

In order to effectively evaluate any training program variables affecting transfer need to be considered, not only individually, but interactively to determine the effects that one variable may have upon another (Zumrah, Boyle, & Fein, 2012). Research measuring and evaluating transfer factors used the LTSI extensively as it was designed to provide information about the characteristics of the workplace that may make training more useful (Bates & Holton, 2012). To date, there is limited understanding of how trainee characteristics and the work environment interact to impact transfer of training (Zumrah et al., 2012).

In response to the call for studies across various disciplines and the identified lack of training evaluations among probation officers the current study sought to identify and evaluate

the impact of individual and work environment factors affecting transfer of training among North Carolina probation officers.

Probation Officer Training

Probation officer training, also commonly referred to as community corrections officer training, varies from state to state and includes various different aspects from law enforcement, social work, mental health, substance abuse issues, criminal law, and courtroom procedures (Office of Staff Development and Training [OSDT], 2012). Such a diverse field requires a great amount of training to ensure officers are adequately prepared to carry out their duties. North Carolina requires probation officers to attend a five-week basic training course certified by the North Carolina Criminal Justice Education Training and Standards Commission and pass the subsequent examination in order to become a certified Probation Officer (OSDT, 2012). The North Carolina Department of Public Safety's (NCDPS) Office of Staff Development and Training (OSDT) administer all training.

Probation Officer basic training was designed to ensure probation officers receive essential training specifically related to their job tasks and are trained to adequately carry out these functions (OSDT, 2012). Probation officer basic training requires 216 hours over five weeks for personnel whose job duties include supervising, evaluating, or otherwise managing offenders (NCDPS, n.d.). After completion of basic training, officers continue to be trained annually in several different areas to maintain their certification to serve as North Carolina probation officers (NCDPS, 2015). Certified officers must complete at least 40 hours of in-service training each year to maintain their certifications (NCDPS, n.d.). Additional training hours are offered and can be requested by individual probation officers (NCDPS, 2015).

Like most other organizations, OSDT sees staff development and training as a vital necessity for effectiveness (2012). The OSDT's in-service section is also responsible for the evaluation of training to ensure it is adequately meeting the needs of the department, officers, and community (OSDT, 2012). However, to date, there is no published research or publications evaluating any area of probation officer training programs in North Carolina. The most notable use of any type of evaluation is the use of trainee reaction evaluations at the end of each training session, but there is no aggregate data on the actual effectiveness of any training program offered to North Carolina probation officers. To assess the effectiveness of a training program, agencies need to determine the factors that impact a trainee's transfer of learned skills to the job (Axtell, Maitlis, & Yearta, 1997).

Problem Statement

An untrained or ineffectively trained workforce is not a viable option for probation officers. Probation officers play a critical role in public safety, therefore, it is vitally important to understand if training is effective and being transferred to the workplace. The transfer literature suggested training research needs to extend beyond simply identifying what works and further investigate why training is effective (Mathieu, Tannenbaum, & Salas, 1992; Tannenbaum & Yukl, 1992). Researchers should examine "why, when, and for whom a particular type of training is effective" (Tannenbaum & Yukl, 1992, p. 433). In order to accomplish this objective, researchers should analyze the characteristics of the trainee, training program, and work environment to determine the reason for training effectiveness. If there is no assessment of the effectiveness of training, it is not possible for organizations to make strategic decisions on the development of employees and ultimately the future directions of organizations.

There is an abundance of literature evaluating various fields and aspects of training transfer, however, there is little to no research evaluating the effectiveness of training and transfer within the field of community corrections among probation officers. Most of the published transfer studies involving law enforcement or public service personnel are conducted utilizing military departments or government management (Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Tziner, Haccoun, & Kadish, 1991). A few publications and dissertations addressed transfer of training within the law enforcement field with police officers and the correctional field with prison trainings, but none surfaced evaluating transfer of training among probation officers (Corey, 2012; Hutchins, Nimon, Bates, & Holton, 2013; Jordan, 2014;). Although probation officers exhibit qualities common to these disciplines, they represent an entirely different discipline with a unique work environment. The most closely related transfer research evaluated transfer of training in a human services agency in the United Kingdom (Clarke, 2002). The study highlighted the lack of transfer research pertaining to the social service departments and the human services field and discussed the unique work environment and climate within human service agencies as workers tend to have more autonomy and less supervision in carrying out their duties. Much like the social service department evaluated in Clarke's (2002) study, probation officers have unique work environments and team structures not found in much of the transfer research. Training is paramount to the success and safety of both probation officers and the community (NCDPS, 2015), but without transfer, the mass amounts of training hours are essentially wasted time and taxpayer dollars. Hence, there was a need to examine the factors affecting transfer within this context to ensure the safety of the public, and efficient and effective utilization of public funds.

Furthermore, only a small number of studies in the transfer literature have included factors such as age, tenure, and prior experience (Ford & Weissbein, 1997) in evaluating aspects of training transfer. A study conducted by Warr and Bunce (1995) on trainee characteristics included age, tenure, and education qualifications which they believed could provide insight into one's prior experiences and motivation to learning as well. A study conducted by Smith-Jentsch, Jentsch, Payne, & Salas (1996) utilizing trainee characteristics found support for the relationship between prior experiences and training outcomes through their influence on motivation or readiness to learn, further supporting the need for researchers to include these variables.

Research also found that the work environment plays an important role in training transfer (Seyler, Holton, Bates, Burnett, & Carvalho, 1998; Tannenbaum, Mathieu, Salas, & Cannon-Bowers, 1991). However, the literature lacks in examining other individual factors that may influence transfer such as age, tenure, and education. These factors may greatly impact the findings and can prove useful to practitioners in the development and implementation of training programs. Evaluating the factors affecting transfer is essential to fully understanding what makes a training program effective (Axtell et al., 1997).

The lack of transfer research in the field of community corrections among probation officers poses a substantial risk for the field of probation. Departments that have not adequately assessed their training programs cannot, with any certainty, determine what works and why. The need for transfer research within this field is paramount to the maintenance of officer and public safety as well as the successful implementation of continuous changes within the field and continued validation of training transfer findings. One of the first steps in evaluating transfer is to

first evaluate and understand the factors that lead to transfer within an organization (Axtell et al., 1997).

Purpose of the Study

The intent of this study was to identify and examine the individual and work environment factors among North Carolina probation officers that influenced a trainees' perceived transfer of training to the job. The goal was to identify characteristics of the workplace that may make training more useful for North Carolina probation officers. Holton (1996) expressed the importance of the work environment as a mediating factor to actual transfer needing exploration in the training literature. The evaluation of seldom studied individual factors such as age, type of educational degree (Criminal Justice or other major), and tenure (number of years as a probation officer in North Carolina) were explored as factors affecting one's transfer of training to the job. A quantitative survey design was used to identify and explore the factors affecting transfer of training among North Carolina probation officers and the relationship of individual and work environment factors on perceived transfer of training.

Research Questions

The study was framed with 4 research questions. The research questions sought to identify and examine the relationships separately of individual demographic, personal variables, and work environment variables with transfer of training for North Carolina probation officers. The study then looked at the variables that had a significant relationship together to determine the amount of variance explained in perceived transfer of training for North Carolina probation officers with those variables. The research questions addressed both the specific training

program of interest and training in general within the department. The specific research questions were as follows.

Research Question 1: What individual characteristics, both personal and motivational as measured by the LTSI, can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

Research Question 2: What work environment factors as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

Research Question 3: What are the individual personal characteristics, work environment factors, and individual demographic factors (age, degree type, and tenure) that have a statistically significant relationship to North Carolina probation officers' attitudes towards factors affecting transfer of training to the job?

Research Question 4: What individual demographic, individual personal characteristics, motivational inputs, and work environmental factors as identified by the LTSI can be used to explain a significant proportion of the variance in perceived transfer of training among North Carolina probation officers?

Theoretical Framework

Camp (2001) defined theory as "a set of interrelated constructs, definitions, and propositions that present a rational view of phenomena by explaining or predicting relationships among those elements" (p. 6). Theories of human behavior, such as Expectancy and Equity theory, provide a theoretical framework for understanding the factors that affect transfer of training and one's motivation to transfer training. Expectancy and Equity theory are both

considered to be theories of work motivation and are frequently used to study individual performance or behavior in the job setting (Yamhill & McLean, 2001). Noe (1986) argued a trainees' attitudes, interests, values, and expectations can influence training effectiveness. The factors affecting transfer include motivation to transfer, transfer climate, and transfer design (Holton, 1996). Transfer motivation is influenced by four categories: intervention fulfillment, learning outcomes, job attitudes, and expected utility (Holton, 1996). Yamhill and McLean (2001) suggest that models of transfer of training need theoretical frameworks to explain "why people desire to change their performance after attending a training program" (p. 197). Expectancy and equity theories provide support for transfer models as they address the impact of an individual's perceived outcomes or utility of their effort as a major factor in transferring learned skills (Yamhill & McLean, 2001). Furthermore, the extant research on transfer of training suggested the use of expectancy and equity theories as theoretical frameworks to understanding transfer of training (Noe, 1986, Baldwin & Ford, 1988, Yamhill & McLean, 2001).

Expectancy theory. The use of expectancy in understanding a trainee's transfer of training is widely cited in the transfer literature as providing a theoretical framework for understanding transfer of skills to the job (Baldwin & Ford, 1988; Clark, Dobbins, & Ladd, 1993; Kontogiorgos, 2001; Noe, 1986; Yamhill & McLean, 2001). Vroom (1964) suggested motivation was a function of effort-performance and performance-outcome perceptions. Simply put, if one does not perceive that their effort will result in better performance and that better performance will result in valued outcomes, then it is unlikely one will be motivated to put forth effort. Baldwin and Ford (1988) concluded that expectancy theory can be used as a foundation

in research to identify environmental factors, rewards systems, and acceptance of new skills by supervisors and peers that influence motivation to transfer. As a result; motivation, effort-performance, and performance-outcome expectations are currently measured by the LTSI as factors affecting transfer of training (Holton et al., 2000). Expectancy theory provides a foundation for understanding an individual's motivation, a necessary precursor to actual transfer.

Equity theory. Equity theory is also suggested by Noe (1986) to provide a context for understanding a trainee's motivation to transfer. Equity theory proposed that people want to be treated fairly and they determine this equity by comparing their ratio of perceived inputs to outputs to their perception of others ratio of inputs to outputs (Adam, 1963). The perception of unfair treatment creates a tension that motivates individuals to seek ways to reduce the tension such as cognitively distorting the inputs or returns, changing one's own inputs or outcomes, changing the comparison person, or leaving the situation (Yamhill & McLean, 2001). Noe (1986) suggests that if an individual feels that training will lead to equity, they are likely to learn and subsequently transfer that learning to the job. Equity theory provides practical application for motivation to transfer. Therefore, it is imperative for trainers and HRD professionals to understand what trainees expect and feel is equitable in order to produce environments and trainings that support transfer. Equity theory provides a foundation and support for the motivational inputs and work environment factors known to impact transfer of training.

Conceptual Framework

The conceptual framework for this research drew upon Baldwin and Ford's (1988), Holton's (1996, 2005), and Holton et al.'s (2000) models of training transfer that include trainee characteristics, training design, and the work environment. It is generally accepted that transfer is

affected by a system of influences (Holton et al., 2000) and a review of the literature revealed individual and work environment factors important in the transfer of training to the job. The research consistently divided transfer influences into three categories: trainee characteristics, training design, and work environment (Baldwin & Ford, 1988; Holton, 1996; Holton et al., 2000). Holton et al. (2000) used the term transfer system to describe "all factors in the person, training, and organization that influence transfer of learning to job performance" (pp. 335- 336). Figure 1.1 displays the conceptual model of the comprehensive transfer system utilized in the development of the LTSI by Holton et al. (2000).

Based upon the conceptual model of the LTSI and the current version of the LTSI (version 4), this study explored the individual trainee characteristics (performance self- efficacy and learner readiness), individual motivational characteristics (motivation to transfer, transfer- effort performance, and performance outcome expectations), and the work environment factors (performance coaching, peer support, supervisor support, resistance to change, personal outcomes positive, personal outcomes negative, and supervisor sanctions) that impact a trainee's transfer of learned skills to the job. Additional covariates including age, type of educational degree, and tenure were also examined as additional individual factors affecting transfer of training. These variables were proposed to affect one's expected utility from effort.

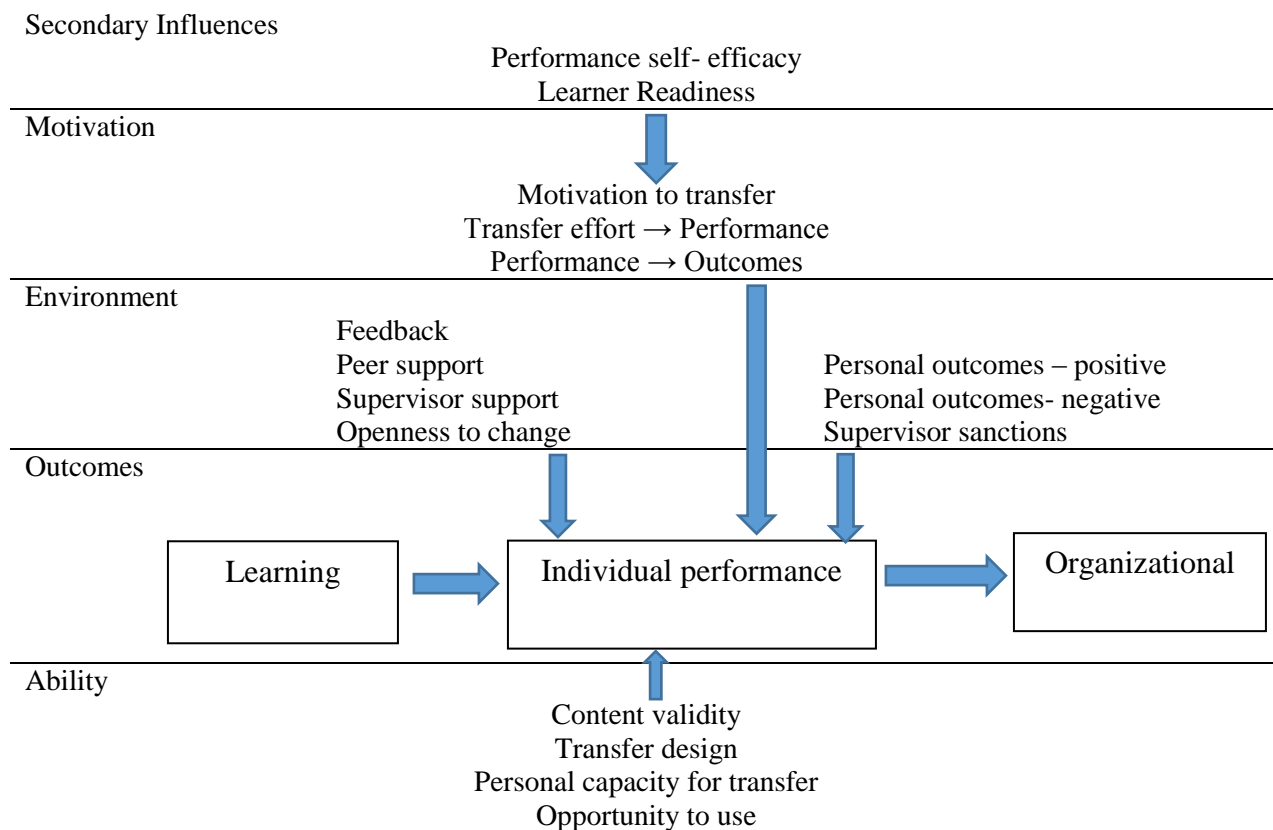


Figure 1.1: Learning transfer system inventory conceptual model (Houlton et al., 2000, p. 339)

This study sought to identify the specific barriers and catalyst to transfer of training and examine the relationships among transfer variables leading to transfer of training among North Carolina probation officers. Figure 1.2 depicts the model of the relationship of individual and work environment factors to transfer of training examined in this study.

Conceptual Framework

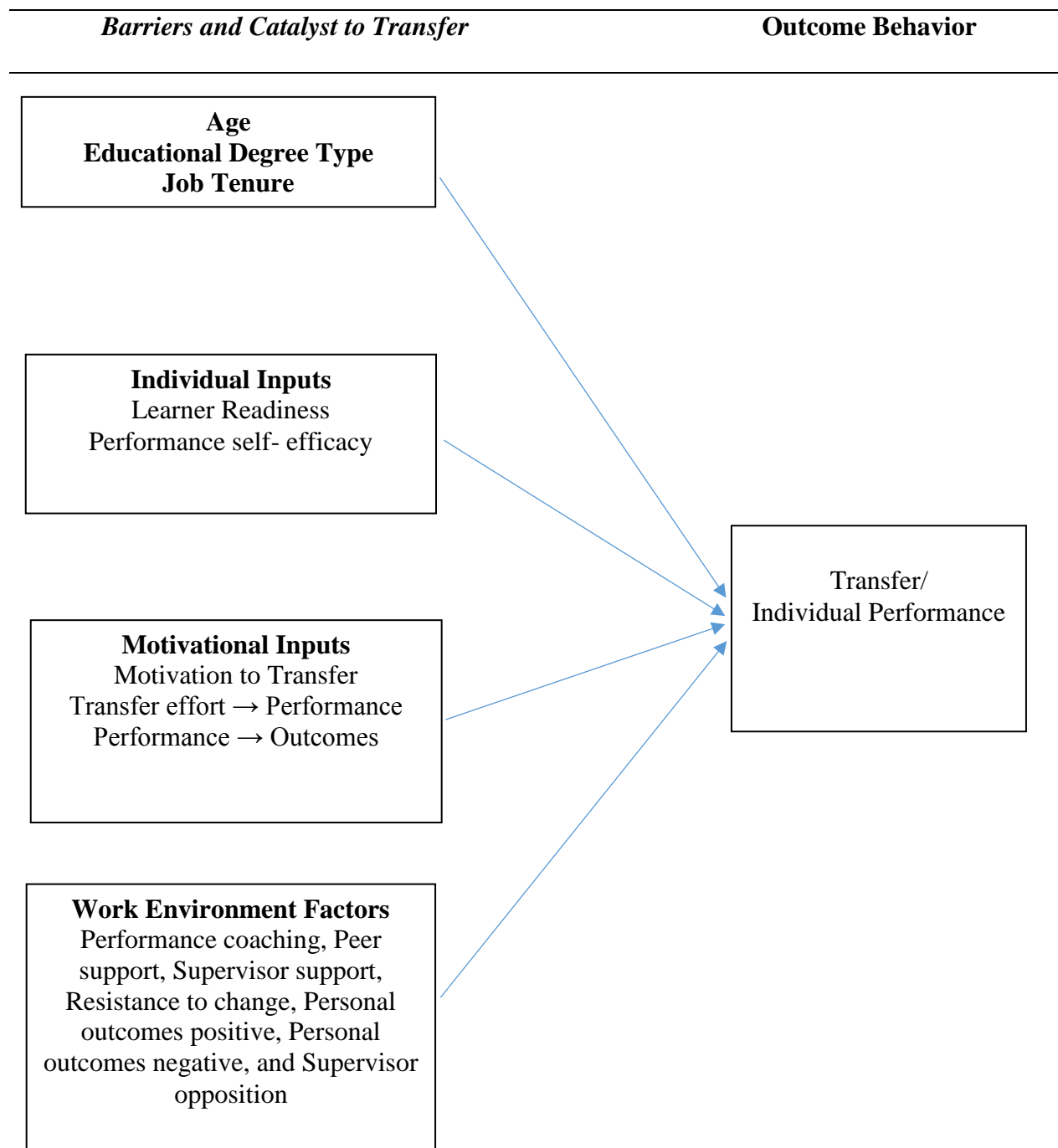


Figure 1.2. Conceptual Framework

Significance of the Study

“Understanding transfer system differences across different situations would help organizations become aware of what parts of a transfer system need improvement to enhance transfer of learning.” (Holton, Chen, & Naquin, 2003, p. 461) This study filled an important gap in identifying factors that affect transfer across various organizations and identifying the effects of both individual and work environment characteristics while also considering other important demographic and individual variables rarely discussed in the transfer literature (Clark, 2002; Holton, Chen, & Naquin, 2003). Probation officers undergo a significant amount of training each year and, as the system evolves and the department continues to shift towards evidence-based practices, the need for research-proven effective training is paramount to the effective supervision of their clientele (NCDPS, 2015). Understanding the factors that affect successful transfer is important to the field as they continue to administer and develop more training programs. Given that there is no known previous research on training effectiveness and training transfer in this field, this study filled an important gap in the literature on the factors that contribute to successful transfer within the field of probation. It also provides practitioners with valuable insight into the factors affecting transfer among probation officers.

Limitations

This study sought to identify and examine factors affecting North Carolina probation officers’ transfer of training to their jobs. The following limitations were identified for this study:

1. The study involved the use of self-reported data from the participants on a survey instrument used to identify factors affecting transfer of training. Self-reported data

- may not be the best measure of transfer factors and respondents may not accurately answer all questions.
2. The study also used a previously validated instrument and relied on previous construct and criterion related validation.
 3. The use of self-reported data also introduced the threat of socially desirable response bias which is recognized as a serious threat to the validity (De Jong, Pieters, & Fox, 2010). Socially desirable responding is the tendency of participants to “describe themselves in favorable terms by adhering to socioculturally sanctioned norms” (De Jong et al., 2010, p. 14). The use of a previously validated instrument did not allow the researcher to test and control for such bias.
 4. The findings may not be generalizable to other fields of study and probation officers in other states.
 5. The study only measured certain aspects of the transfer system and does not take into account other factors that may impact transfer.
 6. The study only measured perceptions of transfer at one point in time for North Carolina Probation Officers. Other factors not measured at this point in time may have impacted officers’ responses.

Delimitations

Several delimitations formed the boundaries for this study. The study only utilized North Carolina probation officers and did not study other fields within this research. The study also did not specifically measure actual transfer of training and used self-reported perceived transfer. Observations and actual measures of transfer could have provided a more accurate assessment of

transfer, but that type of data collection was beyond the scope of this study. Case study data may have provided more in-depth insight, but due to access and time restraints; this study did not utilize this method. Utilizing strictly quantitative survey data, as used in many studies, does not allow the researcher to gain an in-depth understanding and answer the questions of how and why factors affect transfer of training. This study also did not evaluate the training design/ability construct of the LTSI and therefore does not provide a full picture of all the factors affecting transfer as designed by the instrument. Since trainings are conducted utilizing standardized lesson plans, the researcher felt this domain would not affect the individual and work environment factors under study.

The following assumptions were also made in conducting this study:

1. The participants actually learned skills during the course of their trainings.
2. Participants provided truthful responses on the questionnaire.

Definition of Terms

The following includes the definition of terms used throughout this research.

- **Learning Transfer System Inventory:** a self-report instrument used to assess individual perceptions of factors that support or are barriers to work- related training transfer (Bates, Holton, & Hatala, 2012)
- **Motivation to transfer:** a trainee's desire to use the knowledge and skills learned in training (Noe & Schmitt, 1986).
- **Peer support:** a measurement of the extent to which peers reinforce and support use of learned skills on-the-job (Bates & Holton, 2012).

- **Performance Coaching:** formal and informal indicators from an organization about an individual's job performance (Bates & Holton, 2012).
- **Performance Self-efficacy:** a measurement of the extent to which an individual feels confident and self-assured about applying new abilities in their jobs and can overcome obstacles that hinder the use of new knowledge and skills on the job (Bates & Holton, 2012).
- **Performance outcome expectations:** a measurement of the extent to which individuals believe the application of skills and knowledge learned in training will lead to recognition they value. This includes the extent to which organizations demonstrate the link between development, performance, and recognition, clearly articulate performance expectations, recognize individuals when they do well, reward individuals for effective and improved performance, and create an environment in which individuals feel good about performing well (Bates & Holton, 2012).
- **Personal outcomes-negative:** a measurement of the extent to which individuals believe that if they do not apply new skills and knowledge learned in training that it will lead to negative outcomes (Bates & Holton, 2012).
- **Personal outcomes-positive:** a measurement of the degree to which applying training on the job leads to positive outcomes for individuals (Bates & Holton, 2012).
- **Probation:** a period of court-ordered community supervision imposed as an alternative to imprisonment (NCDPS, n.d.).
- **Post Release Supervision and Parole:** a form of supervision in the community after completing a prison sentence (NCDPS, n.d.).

- **Resistance to change:** a measurement of the extent to which group norms are perceived by individuals to resist or discourage the use of learned skills and knowledge (Bates & Holton, 2012).
- **Supervisor support:** a measurement of the extent to which managers support and reinforce the use of learned skills on-the-job (Bates & Holton, 2012).
- **Supervisor/Manager Opposition:** a measurement of the extent to which individuals perceive negative responses from managers when applying skills learned in training (Bates & Holton, 2012).
- **Transfer effort-- performance expectations:** a measurement of the extent to which individuals believe that applying skills and knowledge learned in training will improve their performance. This includes whether an individual believes that investing effort to utilize new skills has made a difference in the past or will affect future productivity and effectiveness (Bates & Holton, 2012).
- **Transfer of Training:** the degree to which trainees effectively apply the knowledge, skills, behaviors, and attitudes learned in training to the job (Baldwin & Ford, 1988)
- **Transfer Climate:** situations and consequences that either inhibit or help to facilitate the transfer of what has been learned in training into the job situation (Rouiller & Goldstein, 1993).
- **Transfer System:** all factors in the person, training, and organization that influence transfer of learning to job performance (Holton et al., 2000)

Summary

This chapter provided an overview of a problem within the transfer literature. A discussion of the lack of research on factors affecting transfer of training in the field of probation officer training was provided, along with an overview of current probation officer training. A theoretical framework was provided utilizing Expectancy and Equity theories as a foundation for studying transfer of training. Research questions were presented with a conceptual framework for the current study. Chapter 2 discusses the relevant transfer of training literature as it pertains to this study.

CHAPTER 2: REVIEW OF THE LITERATURE

The review of the literature includes several sections on transfer of training that provides a foundation for understanding the factors impacting the positive transfer of training among employees in the workplace. The first section provides an overview of probation officer training and professional development in North Carolina. The history and current practices of training and professional development within probation are important in providing a context for the need of this study. The following sections provide an overview of the transfer problem and the evolution of the study of transfer of training. A discussion of the various models used to study transfer of training is provided as several models have been developed, however, some models are proven to be more useful. A discussion and review of the relevant transfer studies that examine the effects of individual and work environment factors on transfer of training are also provided. The following section provides an overview of the Learning Transfer Systems Inventory (LTSI), an instrument used to diagnose factors affecting transfer of training, and provides a brief discussion of the validation of the instrument as a valid method of measuring transfer of training factors. The final section provides a discussion and review of the literature on theories used to support transfer of training models.

Probation Officer Training and Professional Development

This section provides a historical context of North Carolina probation officers as well as their duties, goals, and mission. An overview of the department's philosophy of professional development and in-service training requirements is also provided.

North Carolina probation officers are responsible for supervising offenders in the community placed on probation, parole, or post-release supervision by the courts or the Division

of Prisons. They are responsible for ensuring offenders comply with court ordered sanctions after sentencing (NCDPS, n.d.). “The mission of Community Corrections is to protect the safety of citizens in communities throughout the state by providing viable alternatives and meaningful supervision to offenders on probation, parole or post-release supervision. The primary goal of Community Corrections is to reach an equal balance of control and treatment for offenders that will positively affect their behavior and lifestyle patterns” (NCDPS, n.d.).

Probation officers are initially required to complete basic training which includes 216 hours of training over the course of five weeks in various areas including the legal system, officer-offender relations (including behavior, counseling, crisis intervention, offender supervision, and motivational interviewing), offender management, court procedures, drug identification, firearms safety and use, defensive protection, and personal conduct (NCDPS, n.d.). These trainings are reinforced throughout an officer’s career through yearly in-service trainings conducted by instructors certified through the North Carolina Criminal Justice Education and Training Standards Commission (OSDT, 2012). Mandated training requirements are implemented and enforced by the North Carolina Criminal Justice Education and Training Standards Commission which establishes minimum employment, training, and retention standards for all North Carolina criminal justice officers, which includes probation officers (North Carolina Department of Justice [NCDJ], n.d.). Certified probation officers are required to complete at least 40 hours of in- service training each year to maintain their certifications (NCDPS, 2015). The Office of Staff Development and Training within the North Carolina Department of Public Safety is responsible for the oversight of all probation officer training and must ensure each officer meets minimum training requirements (OSDT, 2012). They are

responsible for training the probation officer workforce in correctional related subjects, which prepares them to satisfactorily perform their work duties and meet mandated training requirements as designated by the North Carolina Criminal Justice Education and Training Standards Commission (OSDT, 2012).

Transfer of Training

This section provides an overview of the transfer problem, a brief discussion of the key contributors to transfer of training research, and an overview of the various models of transfer. Lastly, a discussion of the factors impacting transfer of training and research studies relevant to this study is provided.

Overview of the transfer problem. Transfer of training or training transfer is an important factor in training and development and Human Resource Development (HRD). "Transfer of training," "training transfer," "learning transfer," or "transfer of learning" are used interchangeably within HRD transfer literature. Companies invest billions of dollars each year to train employees and remain competitive; however, these investments have yielded very little returns (Baldwin & Ford, 1988; Broad & Newstrom, 1992; Burke & Hutchins, 2007). It is estimated that anywhere from as little as 10% of the money spent on training resulted in transfer while other researchers found about 40% of trainees failed to transfer knowledge and skills immediately after training with as much as 70% failing to transfer after 1 year (Baldwin & Ford, 1988; Broad & Newstrom, 1992; Burke & Hutchins, 2007; Merriam & Leahy, 2005; Saks, 2002). Training is of no benefit to organizations if trainees do not apply what they learn in training to their actual jobs (Broad & Newstrom, 1992; Salas, Tannenbaum, Kraiger & Smith- Jentsch, 2012; Saks & Burke, 2012; Yamnill & McLean,

2001). Holton (2005) argued improving the work of employees is not just dependent upon training or learning but also requires employees to gain knowledge and transfer that knowledge into work productivity.

The lack of application to the job is commonly referred to as the "transfer problem" and is the impetus for continued research into transfer of training (Baldwin & Ford, 1988; Salas et al., 2012). Transfer should result in "full application of new knowledge and skills to improve individual and/or group performance in an organization or community" (Swanson & Holton, 2001, p. 245). Transfer of training is the end goal of any training program, but there is great difficulty in achieving transfer of training for many organizations and most, if not all, training programs experience transfer problems (Broad & Newstrom, 1992).

Key contributors to transfer of training. Several authors have contributed greatly to the transfer of training literature and are mentioned throughout this study in various aspects pertaining to transfer of training. Timothy Baldwin and J. Kevin Ford are two authors who have jointly and individually contributed a great amount to the training transfer literature. The most notable contribution was their review of the transfer of training literature and the development of a comprehensive model of the transfer process, which is the foundation for much of the transfer research to date (Baldwin & Ford, 1988). Individually, they have authored and co-authored numerous works on training transfer (Baldwin, Ford, & Blume, 2009; Blume, Ford, Baldwin, & Huang, 2010; Burke & Baldwin, 1999; Ford, Smith, Weissbein, Gully, & Salas, 1998; Ford, Quiñones, Segó, & Sorra, 1992; Ford & Weissbein, 1997; Holton & Baldwin, 2000, 2003; Kraiger, Ford, & Salas, 1993; Wexley & Baldwin, 1986). Additionally, Elwood F. Holton III and Reid Bates are also key contributors to the transfer literature base. Holton (1996) developed

a model of the transfer process that expanded the Baldwin and Ford (1988) model by including secondary intervening factors in the transfer process. Holton and Bates are also co-authors of the LTSI, the most widely used instrument in measuring transfer of training (Holton, Bates, & Ruona, 2000). The LTSI is designed to measure multiple categories of factors impacting transfer of training and identifies and defines sixteen factors that affect transfer through the use of exploratory factor analysis (Holton, Bates, & Ruona, 2000). These key contributors laid the foundation for any study on transfer of training and each have provided key insights into training transfer, and their works are often cited as part of any study on training transfer.

Transfer of Training Models

This section provides a discussion of the evolution of the most prominent models used to study transfer of training and describes why the LTSI was used as the model for this study. Models developed by Baldwin and Ford (1988), Thayer and Teachout (1995), and Grossman and Salas (2011) propose that factors before, during, and after training all combine to influence transfer. Other models provide frameworks that include additional intervening variables or new constructs found to also impact transfer (Bates & Holton, 1996; Baldwin & Ford, 1998; Holton, 1996, 2005). Although various models exist, only the most commonly cited and significant models are discussed here.

Baldwin and Ford's Model. One of the most notable models in the transfer of training literature is Baldwin and Ford's (1988) model of the transfer process. The model outlines six linkages among training inputs, training outcomes, and conditions of transfer (Baldwin & Ford, 1988). Figure 2.1 provides a display of the model as outlined by Baldwin and Ford (1988). Training inputs include trainee characteristics (ability or skill, motivation, and personality

factors), training design includes principles of learning, sequencing, and training content, and work environment factors that include transfer climate factors such as supervisory support, peer support, and constraints and opportunities to use acquired knowledge (Baldwin & Ford, 1988).

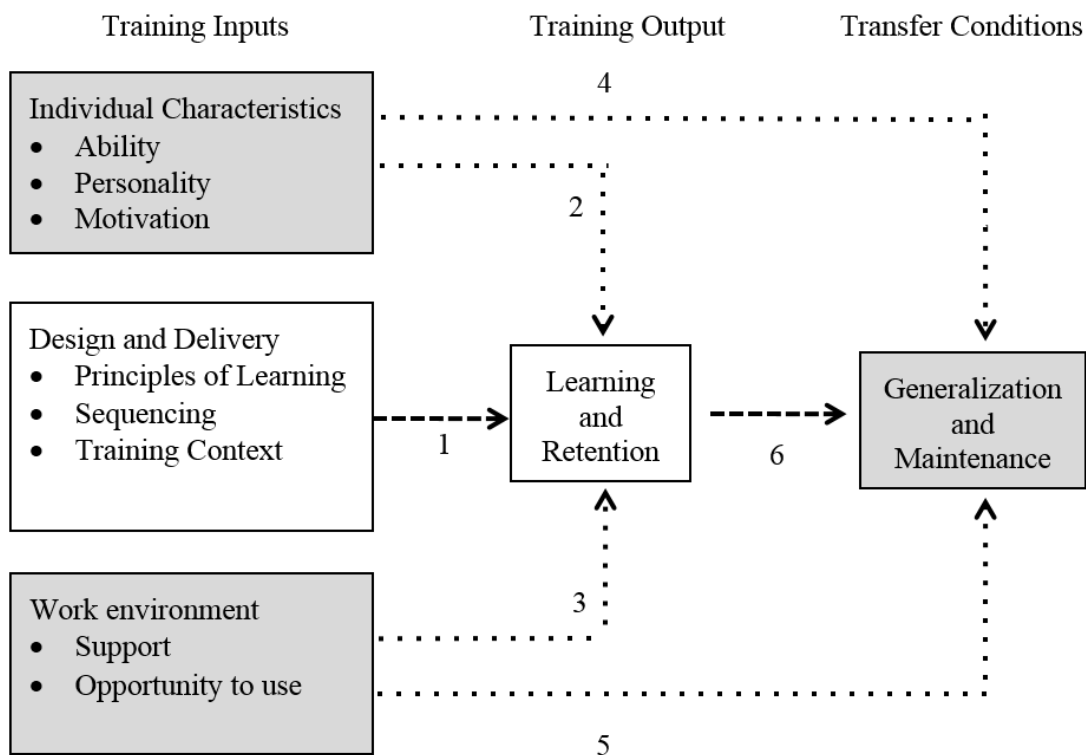


Figure 2.1. Baldwin and Ford's (1998, p. 65) Model of the Transfer Process

Thayer and Teachout's Model. Thayer and Teachout (1995) argued transfer enhancing activities that occur during the training program itself and a favorable climate for transfer in the post-training setting facilitate positive transfer. The transfer model, as proposed by Thayer and Teachout (1995), included conditions of the trainee before training that were either proposed by other models, such as reactions to previous training and self-efficacy (Baldwin & Ford, 1988;

Matheiu, Tannenbaum, & Salas, 1992) or were shown to have some empirical support such as education, ability, locus of control, job involvement, career, and/or job attitudes (Ford, Quinones, Segó, & Sorra, 1992; Ghiselli, 1966; Matheiu, et al., 1992; Noe & Schmitt, 1986; Williams, Thayer, & Pond, 1991). The model proposed learning to be affected by these variables as well as reaction to training and, in turn, that learning impacted transfer. Other variables proposed to impact transfer included post-training self-efficacy, in-training transfer enhancing activities (goal setting and relapse prevention), and the transfer climate (Thayer & Teachout, 1995).

Grossman and Salas' Model. More recently, Grossman and Salas (2011) proposed an abbreviated list of factors impacting transfer and called for a more in-depth investigation as to when (before, during, or after training) these factors are most important. Following Baldwin and Ford (1988), Grossman and Salas (2011, p. 106) proposed the following factors as a model for a more in-depth study into transfer of training: "trainee characteristics (cognitive ability, self-efficacy, motivation and perceived utility of training), training design (behavioral modeling, error management and realistic training environments), and work environment (transfer climate, support, opportunity to perform and follow-up)".

Holton's HRD Evaluation Research and Measurement Model. Other models drawing upon previous works proposed integrative models that included additional intervening factors. Specifically, Holton (1996) proposed an integrative model of training evaluation that included primary and secondary intervening models. Holton's (1996) model sought to address issues he identified with Kirkpatrick's (1976) training evaluation model. Holton (1996) argued previous models did not account for intervening variables and thus draws upon Noe's (1986) findings and included secondary intervening variables of ability, motivation, and environment. In 2005,

Holton further expanded on his initial model to provide a more elaborate model that accurately reflected the transfer process. The model, as displayed in Figure 2.2, provided an updated version of Holton's original HRD Evaluation Research and Measurement Model by incorporating new theories, especially in the area of motivation, and identified specific variables within each of the conceptual construct domains (Holton, 2005).

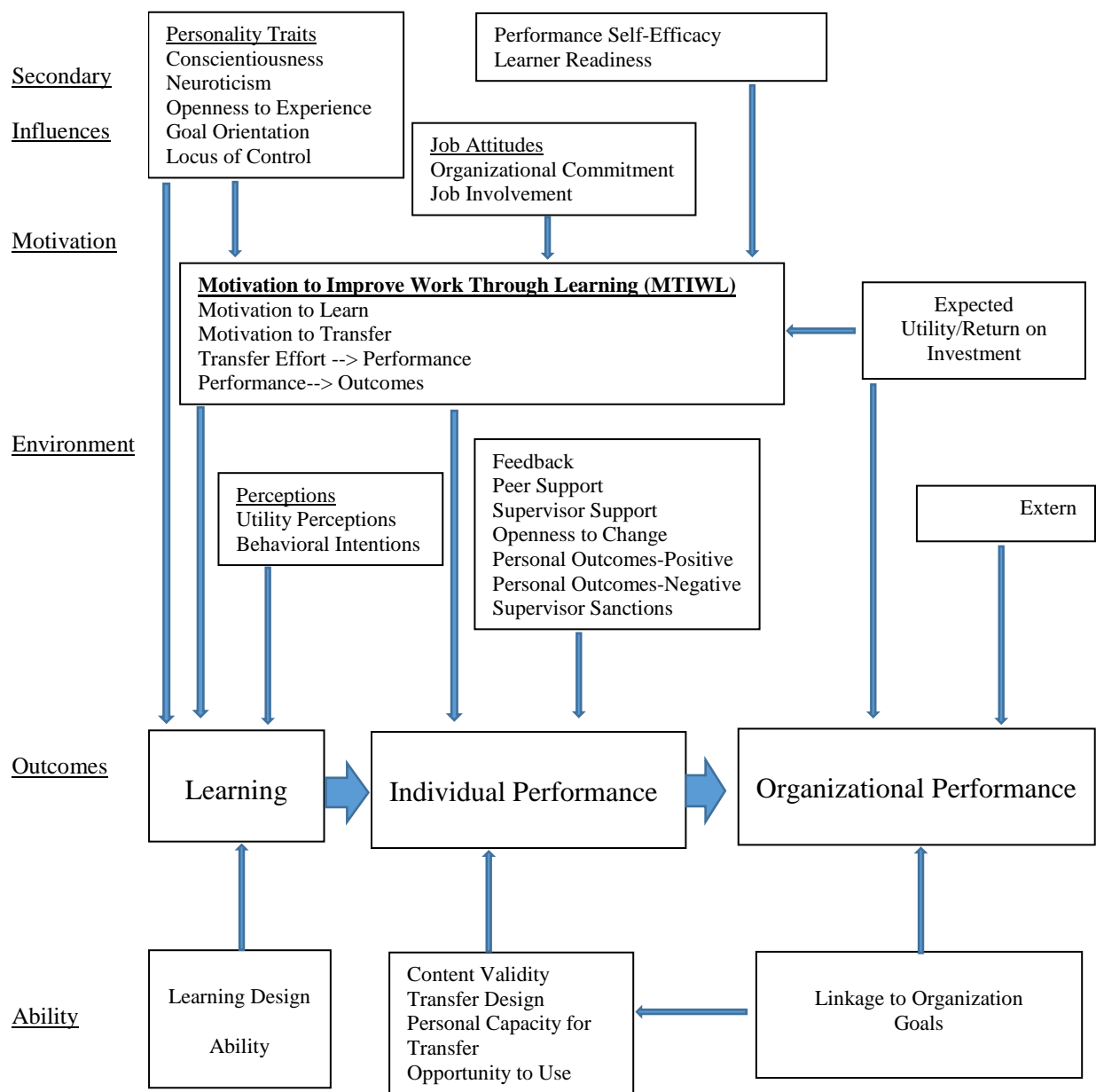


Figure 2.2. Holton’s (2005) Revised HRD Evaluation and Research Model

The Learning Transfer System Inventory Model. Continuing Holton’s (1996) work, Bates and Holton (1996) developed the generalized LTSI conceptual model that included all

factors affecting transfer of training. The model provided a conceptual framework of constructs affecting transfer of training including individual performance, motivation factors, work environment, and organizational behavior (Holton, Bates, & Ruona, 2000). Figure 1.1 displays the elements of the conceptual model of the LTSI. The transfer system as outlined includes all factors that influence transfer of learning to job performance (Holton et al., 2000). Utilizing the model as their conceptual framework, the authors developed version two of the LTSI survey tool used to measure transfer of training factors (Holton et al., 2000). The LTSI has undergone several revisions over the years and is currently still in use as a fourth-generation instrument used to diagnose catalysts and barriers to transfer of training (Bates, Holton, & Hatala, 2012).

The LTSI was used as the model for this study because it provided the most comprehensive view and valid measure of the transfer process. The LTSI model is used extensively throughout transfer research and spans across multiple disciplines and cultures (Bates & Holton, 2012). Numerous studies conducted utilizing the model indicated the model provided a valid and reliable overview and measure of the transfer process (Bates, Holton, Seyler, & Carvalho, 2000; Bates, Kauffeld, & Holton, 2007). The purpose of this study was to identify factors impacting transfer in the workplace for North Carolina probation officers and the LTSI was specifically designed to provide information about the characteristics of the workplace that may make training more effective (Bates & Holton, 2012). The LTSI was also the most valid and widely used model in studying transfer of training, as numerous studies have found support for the relationship between the constructs identified in the LTSI model and transfer of training (Axtell et al., 1997; Ford & Weissbein, 1997; Holton et al., 2000; Kontoghiorghes, 2001; Mathieu, Martineau, Tannenbaum, 1993; Tannenbaum, Mathieu, Salas & Cannon- Bowers,

1991; Rouiller & Goldstein, 1998;). Additional information on the development, history, and use of the LTSI as a transfer of training model and measurement tool is provided in a later section.

Factors Impacting Transfer of Training

Research has identified several factors impacting transfer of training. The significant variables were based on the models proposed by Baldwin and Ford (1988), Holton (1996, 2005) and Holton et al. (2000). It is generally accepted that transfer is affected by a system of influences (Holton et al., 2000). The research has consistently divided transfer influences into three categories: trainee characteristics, training design, and work environment (Baldwin & Ford, 1988; Burke & Hutchins, 1997; Holton, 1996; Holton, Bates, & Ruona, 2000; Noe, 1986; Thayer & Teachout, 1997). Holton, et al., (2000) used the term transfer system to describe "all factors in the person, training and organization that influence transfer of learning to job performance" (pp. 335- 336). Figure 1.1 presents the comprehensive transfer system as defined by Holton et al. (2000) and included all factors believed to influence transfer. Holton's (2005) HRD Evaluation and research model as displayed in Figure 2.2 also provided a complete overview of the factors known to impact transfer of training.

Common factors affecting training transfer include trainee characteristics such as ability, motivation, and personality factors, work environment characteristics such as transfer climate factors (peer and supervisory support and opportunity to use), and training design factors such as principles of learning and training content (Baldwin & Ford, 1988). Trainee characteristics such as cognitive ability, self- efficacy, motivation, negative affectivity, perceived utility, and organization commitment variables had empirical support for influencing transfer (Burke & Hutchins, 2007). Several studies demonstrated the importance of work environment factors in the

transfer process (Baldwin & Ford, 1988; Bates et al., 2000; Clarke, 2001; Noe, 1986; Velada, Caetano, Michel, Lyons, & Kavanagh, 2007). Of particular interest for this study were self-efficacy, motivational inputs, and work environment factors. A brief description and significant research surrounding each of these factors is discussed below.

Performance self-efficacy. Self-efficacy has been tested in numerous studies and was found to impact transfer. Self-efficacy is defined as "judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). Holton et al., (2000) referred to performance self-efficacy as an individual's general belief that they are able to change their performance when desired. Self-efficacy is suggested to impact both transfer and the motivation to transfer (Baldwin & Ford, 1988; Noe, 1986). Tannenbaum & Yukl (1992) concluded in their review that "self-efficacy can be regarded as a predictor of training success, as a process variable during training, or as a desirable outcome of training" (p. 415). One's perceived self-efficacy influences thought patterns and emotions that can enable actions for overcoming obstacles to transferring newly learned skills (Bates & Holton, 2004).

Studies of the impact of performance self-efficacy on transfer of training indicated a positive relationship with transfer (Burke & Hutchins, 2007). A study utilizing 666 trainees during Naval recruit training also found support for self-efficacy, motivation, and commitment as factors impacting performance or transfer (Tannenbaum et al., 1991). A later study conducted with 215 university students enrolled in 15 eight-week bowling classes found self-efficacy to be related to subsequent performance (Mathieu, et al., 1993). Self-efficacy was also found to have an impact in a study of Air Force Aerospace Ground Equipment (AGE) and Airman Basic-in-Residence (ABR) technical training courses. The study found individuals high in self-efficacy

were more likely to perform more of the trained tasks, more complex tasks, and more difficult tasks (Ford et al., 1992). However, Axtell et al. (1997) did not find self-efficacy to be correlated with transfer in their study on predicting short and long-term transfer of training, but concluded self-efficacy is related to motivation in the study, and therefore may influence transfer through its impact on motivation. Clasen's (1997) study utilizing expectancy theory to predict transfer found performance self-efficacy to be a predictor of transfer for 93 law enforcement officers attending a seminar on report writing. The study concluded that officers transferred report-writing skills based on the belief of their ability to write reports at a given level (Clasen, 1997). Velada, Caetano, Michel, Lyons, and Kavanagh (2007) found further support for performance self-efficacy as a positive correlate to transfer of training. In a study of 182 grocery store employees, performance self-efficacy significantly predicted transfer of training, $\beta = 0.30, p < 0.01$ (Velada et al., 2007). Regression analysis conducted by Al-Eisa, Furayyan, and Alhemoud (2009) utilizing transfer intentions as the outcome variable also found self-efficacy to be a significant predictor ($\beta = .33, p < .05$). In another study examining the impact of individual characteristics and transfer climate factors on training effectiveness among employees from a large industrial company, Tziner, Fisher, Senior, and Weisberg (2007) found self-efficacy to be highly correlated with two outcome variables final scores on an end of course assessment ($r = .661, p < .000$) and supervisor evaluations ($r = .509, p < .000$). Overall, the research on performance self-efficacy indicated the importance of the variable as an individual factor impacting transfer of training.

Motivational inputs. Both motivation to learn and motivation to transfer are variables studied within the transfer literature. Motivation to transfer is one of the most important

antecedents to actual transfer (Holton, 1996). This section provides a brief overview of motivation to transfer and the factors impacting motivation (transfer-effort performance and performance outcomes). Significant research on motivational inputs as a factor impacting transfer of training is also provided.

Motivation to transfer. Noe (1986) first introduced motivation to transfer as a construct in the transfer of training literature in his model of motivational influences on training effectiveness. Oakes, Ferris, Martocchio, Buckley, and Broach (2001) define motivation as “the proximal determinant that influences a person’s decision to allocate the effort required to perform the activities necessary to learn” (p. 255). Motivation to transfer is a trainees’ desire to use the knowledge and skills learned in training on the job (Noe, 1986). Transfer motivation is the direction, intensity, and persistence of one’s effort towards utilizing the skills and knowledge learned in work setting (Bates, Kauffeld, & Holton, 2007). Motivation to transfer was also defined in the literature as “the intended effort towards utilizing the skills and knowledge learned in a training atmosphere to the real world work situation” (Seyler, Holton, Bates, Burnett, & Carvalho, 1998, p. 4). It is one of the most significant variables mediating the relationship between learning and transfer, as even learned skills may not be transferred or maintained on the job due to lack of motivation (Baldwin & Ford, 1988; Holton, 1996; Noe, 1986).

Transfer motivation is argued to be the most crucial precondition for trainees’ to transfer training to the job (Holton, 1996). Employees engage in a process of improving work through learning, which included transfer, and Holton (2005) argued this motivation to improve work through learning (MTIWL) involved the motivation to learn and the motivation to transfer. Naquin and Holton (2003) also reported support for the construct of motivation in a study

utilizing the LTSI as the measure of motivation to transfer. Motivation was also a mediating factor for other variables proven to significantly impact transfer (Holton, 1996). The motivation to transfer learned knowledge and skills from training to the workplace is an important antecedent to the actual transfer of training (Holton, 1996). Research reported motivation to transfer to be a significant factor in predicting transfer and affecting post- training performance (Ford & Weissbein, 1997; Holton et al., 2000; Jodlbauer, Selenko, Batinic, & Stiglbauer, 2012). Motivation is reported in the literature as both a predictor of transfer (Axtell et al., 1997) and as an outcome variable (Kontoghiorghes, 2002). The use of motivation to transfer as an outcome variable provided further evidence of the validity of the factor as impacting overall transfer.

Transfer - effort performance and performance outcomes. Noe (1986) suggested trainees' motivation may be influenced by effort-performance and performance-outcome beliefs. Expectancy theory as proposed by Vroom (1964) discussed motivation as a three-part process influenced by effort-performance expectancy, performance-outcome expectancy, and valence. Effort performance is an individual's perception that effort is positively correlated with performance outcomes, performance-outcome is one's belief that improved performance will result in desired outcomes, and valence is concerned with the values of reward (Vroom, 1964). Trainees are motivated to transfer learned skills to the job when they feel confident in using the skills, know of appropriate work situations to use the skills, believe new skills will result in improved job performance, and believe that learned knowledge and skills are useful in solving work-related problems (Noe, 1986). As a result, the study of motivation requires the study of both transfer-effort performance and performance outcomes as they are both individual characteristics that influence a trainee's motivation.

Motivation to transfer is a demonstrated important factor in predicting transfer of training. Axtell et al. (1997), in a study of non-managerial staff training on developing interpersonal skills, found motivation to transfer to be a significant variable in determining their level of transfer after one month and after one year. Additionally, an innovative study utilizing interviews of 44 participants from different organizations in one training program also found that a lack of motivation to transfer resulted in no training transfer at work among the participants and subsequently concluded that in order for the transfer of knowledge and skills to take place, motivation to transfer learning to the work setting must be present (Nikandrou, Brinia, & Bereri, 2009). Research examining motivation to transfer as an outcome variable further supported the construct as a factor impacting transfer. Seyler, Holton, Bates, Burnett, and Carvalho (1998) utilized motivation to transfer as an outcome variable in a study on 88 trainees attending a computer based training program. The study examined the relationship between motivation to transfer and five groups of variables (individual attitudes, situational specific attitudes, reactions, learning, and work environment) and concluded motivation to transfer was an important precursor to actual transfer and served an important role in transfer process.

Research proves motivational inputs to be a significant factor to actual transfer and a mediating factor to other factors also directly impacting transfer (Ford & Weissbein, 1997; Holton, 1996; Holton et al., 2000; Jodlbauer et al., 2012). Without motivation to transfer, one cannot expect actual transfer to follow consistently.

Work environment. Although individuals may be motivated to transfer learned skills to the job, circumstances within the work environment upon their return may inhibit or prevent transfer of the learned skills (Tannenbaum & Yukl, 1992). The effectiveness of a training

program not only depends on how well a training program is designed and how much trainees learn, but is also dependent upon the existence of a positive work environment (Kontoghiorghes, 2001). This section provides an overview of the literature and research on work environment factors affecting transfer of training.

Work environment factors affect the extent to which trainees apply learned knowledge and skills to the job setting (Tziner et al., 2007). Characteristics of the work environment include supervisory and peer support, feedback, and constraints and opportunities to apply learned behavior to the job, which have a direct impact on transfer (Baldwin & Ford, 1988; Thayer & Teachout, 1995). Work environment factors are considered to be a part of the overall transfer climate. The transfer climate provides insight into transfer of training factors that can either support or inhibit transfer of training even when learning occurred during training (Mathieu, Tannenbaum, & Salas, 1992). The transfer climate is cited in several studies to have a significant effect on transfer of training (Rouiller & Goldstein, 1993; Tracey, Tannenbaum & Kavanaugh, 1995). Although seen as different from the work environment, the transfer climate is an employees' perception of the work environment factors and is therefore included in discussions of work environment factors to undergird the study as these factors provided reminders for trainees to use their training once they return to their jobs (Sookhai & Budworth, 2010). The transfer climate is defined as "situations and consequences that either inhibit or help to facilitate the transfer of what has been learned in training into the job situation" (Rouiller & Goldstein, 1993, p. 379). Rouiller and Goldstein further noted, "unless trainees transfer into job situations that have a climate that supports the use of behaviors learned in training, they will not be likely to use their learned skills" (1993, p. 378). Each of the major models of the transfer

process include some variation of the transfer climate and work environment factors (Baldwin & Ford, 1988; Grossman & Salas, 2011; Holton, 2005; Holton, Bates, & Ruona, 2000; Thayer and Teachout, 1995). Cues that prompt trainees to use new skills, rewards for correct use of skills and remediation for not using skills, and social support from peers and supervisors in the form of incentives and feedback represent characteristics of a positive transfer climate (Rouiller & Goldstein, 1993). Numerous research studies utilized and examined the impact of work environment factors on transfer of training. A brief overview with a discussion of the relevant research for work environment factors are presented below.

Performance coaching. Performance coaching is defined as those indicators, both formal and informal, from an organization regarding an individual's job performance (Bates & Holton, 2012). Performance coaching was also commonly referred to as performance feedback in the literature. For example, Velada, Caetano, Michel, Lyons, and Kavanagh tested the effects of performance feedback on transfer of training using the same definition taken from the LTSI version two as cited above: "formal and informal indicators from an organization about an individual's job performance" (2007, p. 287). Holton et al.'s (2000) version two of the LTSI suggested that performance coaching, constructive feedback, input, and assistance from leadership and peers were factors impacting transfer of training. Performance coaching/feedback was consistently reported to be a significant factor impacting training transfer.

Reber and Wallin (1984) evaluated their hypothesis that employee performance in occupational safety at a farm machinery manufacturing firm will improve when employees receive feedback on their performance. The results of the study indicated that employees obeyed behavioral safety rules more when they received frequent feedback regarding their behavior

(Reber & Wallin, 1984). A later study by Velada et al. (2007) of 182 grocery store employees found performance feedback to be positively and significantly related to transfer ($r = .31, p < .001$) and regression analysis also found performance feedback to significantly predict transfer ($b = .42, p < .01$).

Resistance to change and supervisor opposition. Resistance to change and supervisor opposition are considered to be transfer inhibiting factors in the transfer system (Kirwan & Birchall, 2006). Resistance to change refers to the extent to which individuals perceive the group norms to resist or discourage the use of newly learned skills and knowledge on the job (Bates & Holton, 2012). Organizations continuously introduce and implement various initiatives to change and improve their organizations, however, many efforts to change within the organization do not reach this intended goal (Choi & Ruona, 2013). Resistance to change influences an individual's willingness to invest the necessary energy that would allow support to follow (Holton et al., 2000). Supervisor opposition is an individual's perception of negative responses from a supervisor when applying learned skills to the job (Bates & Holton, 2012). Bates, Holton, Seyler and Carvalho (2000) conducted a study on factors affecting transfer of training for a computer-based training program in an industrial setting using supervisory ratings of performance after training as the outcome variable. Hierarchical regression analysis was conducted and indicated both group resistance to change and supervisor sanctions significantly increased the level of variance explained by the model when added to the regression equation (Bates et al., 2000). The full regression model included content validity, peer support, change resistance, and supervisor sanctions as independent variables able to significantly predict performance ratings ($R^2 = .43$). An earlier study by Seyler et al. (1998) evaluated motivation to transfer among

trainees ($n = 88$) of a computer based training program and also found supervisor sanctions had a significant relationship to motivation to transfer ($r = -.396, p \leq .001$) and regression analysis concluded supervisor sanctions were a significant predictor of motivation to transfer ($\beta = -.179, p \leq .05$). Kirwan and Birchall, (2006) in examining Holton's HRD Evaluation and Research Model, also suggested resistance to change and supervisor opposition were aspects of an unsupportive climate as they found no significant relationship with these factors and motivation to transfer.

Peer and supervisor support. The support from supervisors and peers that trainees receive, commonly referred to as social support factors, to use their new skills and knowledge is one of the most notable factors used to examine the relationship between the work environment and transfer of training (Clarke, 2002). Peer and supervisor support is the reinforcement and support for the use of learned skills on the job by one's peers and supervisor (Bates & Holton, 2012). The social support system (supervisors, coworkers, and others interacting with trainees) played a central role in transfer (Rouiller & Goldstein, 1998). Previous research conducted by Tracey, Tannenbaum, and Kavanagh also supported the view that the work environment is important in the transfer of newly acquired behavior and skills (1995). The examination of the relationship of peer support and transfer of training has resulted in consistent findings of a positively significant relationship (Burke & Hutchins, 2012). Research on the role of supervisor support, however, has produced mixed results with some studies finding negative or no significant relationship with transfer of training (Burke & Hutchins, 2012). Overall, research studies on the social support factors, peer and supervisor support, were found in abundance in the transfer literature and were shown to impact transfer of training. Seyler et al.'s (1998), study on a

computer based training program found work environment factors (opportunity to use, peer support, supervisor sanctions, and supervisor support) explained an additional 26.4% of the variance in motivation to transfer once added as the final step in the hierarchical regression analysis, further indicating the importance of social support factors. A discussion of the relevant research studies evaluating the effects of supervisor and peer support on transfer of training is provided below.

There is contradictory evidence on the relationship between supervisor support and transfer of training, but the overall literature suggested there is a significant relationship and that supervisor support does increase the likelihood of training transfer (Velada et al., 2007). For example, Fecteau, Dobbins, Russell, Ladd, and Kudisch (1995) found supervisor support was negatively related to transfer. Additionally, a study by Seyler et al. (1998) also found conflicting results in regards to supervisor support. In examining transfer factors affecting motivation to transfer computer-based training within a chemical company, supervisor support was significantly correlated with motivation to transfer ($r = .397, p \leq .001$), but was not a significant predictor of motivation to transfer indicating the need for further testing of the variable. Similarly, Velada et al.'s (2007) study of 182 grocery employees found supervisory support to be positively and significantly related to transfer ($r = .31, p < .001$), but regression analysis did not find supervisor support to be a significant predictor of training transfer.

However, numerous studies reported positive results for the relationship between supervisor support and transfer of training (Baldwin & Ford, 1988; Bates et al., 2000; Ford et al., 1992; Kontoghiorghes, 2001; Noe, 1986, Seyler et al., 1998). A qualitative study by Lim and Johnson (2002) found work environment factors relating to supervisor support to be among the

most influential in impacting transfer. Another study conducted on Air Force trainees (Ford et al., 1992) found supervisory support to be a significant factor in opportunity to perform for the trainees. Clarke's (2002) qualitative study of a human service department in the United Kingdom also found support for Baldwin and Ford's (1988) constructs of support. Kontoghiorghes, in support of previous research, found supervisory support for new skills and knowledge and task cues to be two of the most influential factors for training transfer (2001). This exploratory study found support for both the training transfer climate and work environment factors reporting high correlations for supervisory support for new skills ($r = .577, p < .001$), participative organization ($r = .505, p < .001$), task cues ($r = .492, p < .001$), employee involvement ($r = .433, p < .001$), multi-skill work environment ($r = .40, p < .05$), information sharing ($r = .382, p < .05$), intrinsic reinforcement when applying new skills ($r = .344, p < .05$), and social support for new skills and knowledge ($r = .321, p < .05$). The training transfer climate factor accounted for 39.8 percent of the total variance of training retention ($\beta = 10.94, p < .000$) (Kontoghiorghes, 2001). A 2009 study of 287 participants attending eighteen targeted training programs in Riyadh evaluated the effects of supervisor support on intent to transfer and found similar results and support for supervisor support as a predictor of intent to transfer ($\beta = .37, p < .01$) accounting for 14% of the variance in transfer intention (Al-Eisa et al., 2009).

Conflicting research results on the impact of supervisor support indicated the need for further testing of work environment factors. Facticeau et al. (1995) found supervisor support negatively related to perceived transfer and Seyler et al. (1998) concluded supervisor support was not a significant predictor of motivation to transfer. Velada et al. (2007) also reported mixed results indicating supervisor support had a significantly positive relationship to transfer but was

not a significant predictor of transfer. Kontoghiorghes (2001) found significantly high correlations for supervisor support and transfer. Al-Eisa et al. (2009) also found supervisor support to be a significant predictor of intent to transfer.

Similarly, Facticeau et al. (1995), Bates et al. (2000), and Seyler et al., (1998) have all found significant results indicating peer support as a factor impacting transfer of training. Facticeau et al. (1995) conducted a large-scale study of supervisors and managers employed within state government ($n = 967$) testing the effect of various factors including social support factors on pre-training motivation and perceived transfer of training and found peer support to be positively related to perceived transfer of training ($r = .56, p \leq .05$). Seyler et al.'s (1998) study on the factors affecting motivation to transfer computer-based training within a chemical company found peer support to be highly correlated with motivation to transfer ($r = .54, p \leq .001$). Furthermore, peer support was also a significant predictor of motivation to transfer, $\beta = .315, p \leq .01$ (Seyler et al., 1998). Peer support was also found to be significantly related to skills transfer ($r = .48, p < .01$) in a test by Chiaburu and Marinova (2005) that utilized structural equation modeling to test the relationship between peer support and skill transfer among employees ($n = 186$) attending a one day corporate information program. The study further concluded peer support to be a significant predictor ($\beta = .65, p < .05$) of skills transfer (Chiaburu & Marinova, 2005).

Overall, work environment factors were vital to transfer of training; without the proper climate upon return to the work environment, transfer is unlikely to happen. Seyler et al. (1998) concluded environmental factors including peer and supervisor support are the most important variables in motivation to transfer and motivation to transfer is a mediating factor and precursor

to actual transfer (Holton, 1996). Research on transfer of training has resulted in the discovery of numerous factors affecting the transfer process (Baldwin & Ford, 1988; Holton et al., 2000). As a result of the numerous factors identified to affect transfer of training, Holton et al. (2000) developed the LTSI to operationalize transfer factors and begin the process of developing a valid and generalizable set of transfer system scales. The following section outlines the LTSI, the survey tool used to measure factors affecting transfer of training for this study.

Learning Transfer System Inventory (LTSI)

The Learning Transfer System Inventory (LTSI) is an empirically based self-report survey instrument used to diagnose the strengths and weaknesses of an organizational transfer system by assessing a set of 16 factors across three domains (trainee characteristics, work environment, and ability) that influence transfer of training to the job (Holton, Hsin-Chih, & Naquin, 2003). Based upon the work of Noe (1986) and Rouiller and Goldstein (1993), and in response to Baldwin and Ford's (1988) diagnosis of the criterion problem in evaluating and measuring transfer constructs, the LTSI was created to provide a consistent measure of factors affecting transfer of training (Holton et al., 2000). Bates and Holton recently noted the LTSI is an empirically designed self-report tool to diagnose individual perceptions of catalysts and barriers to transfer within the workplace (2012). Prior to the development of the LTSI, a wide variety of measures were utilized to assess the factors affecting transfer and very few had undergone rigorous testing (Holton et al., 2000). The LTSI is currently a fourth generation instrument and has undergone rigorous testing and several revisions to ensure the most accurate measure of transfer factors (Bates et al., 2012).

History of the LTSI

Version one of the LTSI, constructed in 1997 by Holton, Bates, Seyler, and Carvalho (1997) utilized a pool of questions from previous instruments to develop a 62 item survey that assessed nine constructs. Common factor analysis conducted with a sample of operating technicians ($n = 189$) at a petrochemical manufacturing plant produced acceptable factor loadings across nine constructs to validate the initial instrument (Holton et al., 2000).

Issues noted with several constructs in the original version prompted further instrument development to address content validity and to possibly identify and test other transfer constructs. Version two set out to develop a valid and generalizable set of transfer system scales that would eliminate the need for repetitive instrument design to measure transfer factors as well as to improve upon the previous instrument in measuring transfer factors (Holton et al., 2000). Version two, an expanded version of the original LTSI instrument, included a pool of 112 items and added seven additional transfer scales to measure a total of sixteen constructs (Holton et al., 2000). Version two utilized Holton's (1996) model as the theoretical framework and extant research within the transfer literature to identify the additional constructs of performance self-efficacy, transfer-effort performance, performance-outcomes, personal capacity for transfer, feedback-performance coaching, learner readiness, and general motivation to transfer (Holton et al., 2000). Items were further divided into two domains representing factors (11 constructs) affecting a specific training program (learner readiness, motivation to transfer, positive personal outcomes, negative personal outcomes, personal capacity for transfer, peer support, supervisor support, supervisor sanctions, perceived content validity, transfer design, and opportunity to use) and factors (five constructs) representing any training program in general (transfer effort-

performance, performance-outcomes, openness to change, performance self-efficacy, and feedback-performance coaching; Holton et al., 2000). Exploratory factor analysis of version two, administered to 1,616 people from a variety of organizations and training programs, resulted in a clean sixteen factor structure and a final 68 item instrument (Holton et al., 2000). Holton, Hsin-Chih, and Naquin (2003) tested the model and concluded the instrument had both convergent and divergent validity in a study which revealed most of the constructs had only low correlations with other related variables. Further research conducted by Holton, Bates, Bookter, and Yamkovenko (2007) to assess the convergent and divergent validity of version two of the LTSI utilized seventeen alternative scales for measuring transfer and a sample of 237 participants from quasi-public organizations to verify both convergent and divergent validity. Additional studies utilizing correlation analysis indicates the LTSI's ability to measure unique constructs and provides evidence of convergent and divergent validity of the measurement constructs (Holton et al., 2007). Further attempts to clearly define and expand constructs beyond version two, resulted in version three of the instrument. Version three includes an additional twenty-one items across the same sixteen constructs in an attempt to accurately measure all factors affecting transfer of training (Bates et al., 2012).

Version four of the LTSI included 48 items measuring the same sixteen constructs as versions two and three (Bates et al., 2012). Taking suggestions from previous research on the development of the LTSI from Holton et al. (1997), Bates et al. (2012) sought to assess the factor structure of the 89 item version three LTSI and utilized exploratory factor analysis to further test the validity of a reduced item survey with confirmatory factory analysis. The study utilized a sample of 5,990 participants gathered from other researchers conducting studies utilizing version

three spanning across seventeen countries using fourteen different languages and resulted in shorter 48 item survey measuring the same sixteen constructs across the training specific and training in general domains as initially outlined in version two (Bates et al., 2012). The diversity of the sample in the development of version four provided evidence of the use of the LTSI across various industries, training programs, and cultures.

Numerous studies and dissertations utilized the LTSI as a measure of transfer factors; and the use of the instrument across multiple disciplines, organizations, and cultures exhibits proof of construct validity, external validity, and reliability (Bates, Holton, Seyler, & Carvalho, 2000; Bates, Kauffeld, & Holton, 2007; Bates & Khasawneh, 2005; Chen, Holton, & Bates, 2005; Devos, Dumay, Bonami, Bates, & Holton, 2007; Holton & Bates, 2011; Seyler et al., 1998; Yamkovenko, Holton & Bates, 2007; Yamnill, 2001). Chapter three provides more detailed information regarding the validity and reliability of the LTSI.

Theories Supporting Transfer of Training

Individual performance is the basis of transfer, therefore, in order to study transfer it is essential to understand human behavior and one's motivation to change their behavior. Yamnill and McLean (2001), argued for the need of a theoretical framework to support transfer of training models and proposed several theories in support of transfer of training. Yamnill and McLean (2001) suggested Equity and Expectancy theories as theoretical frameworks to support transfer of training research. A trainees' attitudes, interests, values, and expectations can influence training effectiveness and the degree to which a trainee transfers learned material to the job, making it imperative to understand these characteristics (Noe, 1986). However, before transfer can take place, there are factors that contribute to a trainee actually transferring the

learned material. As indicated by Holton (1996), factors affecting successful transfer included motivation to transfer, transfer climate, and transfer design. Subsequent research further found the attitudes and behaviors as described in Expectancy and Equity theories to be catalyst and barriers to transfer of training. Specific to this study, Expectancy theory and Equity theory addressed motivation to transfer, performance self-efficacy, transfer effort-performance, performance outcome expectancy, and work environment constructs such as supervisor and peer support as factors that determined an employee's behavior (Yamnill & McLean, 2001).

Expectancy Theory. Vroom's Expectancy theory is used in a variety of fields for the purposes of organizational management, training and performance evaluations, and educational assessments. Expectancy theory provides a framework for individual performance including transfer of training to the workplace (Yamnill & McLean, 2001). Expectancy theory seeks to describe the process of how people are motivated by the perceived or expected outcomes of their actions. Noe (1986) suggested that trainees will be more motivated to perform well in training if they perceive (a) high effort will lead to improved training performance, (b) high performance in training will lead to high job performance, and (c) high job performance is instrumental in obtaining desired outcomes and avoiding undesirable outcomes. The transfer of learned material in training to the workplace is dependent upon a variety of factors including individual motivation factors and work environment factors that support transfer (Holton, 1996). Vroom (1964) proposed behavior is the function of ones perceived expectations, abilities, and beliefs on achieving a perceived valued outcome. In order to examine if someone will transfer training, it was important to evaluate what motivated individual behavior. Expectancy theory has been

widely suggested and used in studying motivation to transfer training, a precedent to actual transfer (Baldwin & Ford 1988; Holton et al., 2000; Noe, 1986; Yamnill & McLean, 2001)

Expectancy theory supports both the individual characteristics and work environment factors that affect one's training motivation and ability to transfer training as these factors contribute greatly to one's expectations. Baldwin and Ford (1988) concluded that expectancy theory can be used as a foundation in research to identify environmental factors, reward systems, and acceptance of new skills by supervisors and peers that influence transfer of training. An individual must see value in the behavior to be motivated and the value is determined by both individual and work environment factors of interest in transfer of training research.

Clasen (1997), in evaluating a report training session for law enforcement officers, utilized expectancy theory as the framework for the research and concluded that performance after the training was influenced by the trainees perceived ability to perform and their belief that performance would result in desired outcomes (expectancy and valence). Clasen further concluded transfer was also influenced by perceived outcomes of sanctions or positive feedback from supervisors (1997). These findings were similar to previous studies conducted by Clark et al. (1993); Noe and Schmitt, (1986) and Mathieu et al. (1993) that utilized expectancy theory as a theoretical framework. Mathieu et al. (1993) used expectancy theory constructs (perceived instrumentality and valence/perceived rewards) as a framework for a study on a proofreading training. Although the study did not evaluate perceived effort and performance in training, the authors concluded expectancy theory provided a valuable framework for the study of training effectiveness (Mathieu et al., 1993)

Equity Theory. Equity theory was proposed by numerous authors as an explanation for work motivation (Adams, 1963, 1965; Homans, 1961; Jaques, 1961). The underlying premise of equity theory is that people want to be treated fairly (Yamnill & McLean, 2001). As outlined by Pritchard, Adams' (1965) equity theory considers "(1) the nature of inputs and outcomes, (2) the nature of the social comparison process, (3) the conditions leading to equity or inequity and the possible effects of inequity, and (4) the possible responses one may make to reduce a condition of inequity" (1969, p. 176). Adams (1963) explains there are certain variables present in an employee-employer exchange and labels these as inputs and outcomes or outputs. Inputs include "education, intelligence, experience, training, skill, seniority, age, sex, ethnic background, social status, and, very importantly, the effort he expends on the job" (p. 422) while "outcomes include pay, rewards intrinsic to the job, seniority benefits, fringe benefits, job status and status symbols, and a variety of formally and informally sanctioned perquisites" (p. 423). Noe (1986) stated, "If an individual feels that by attending training he [or she] is likely to gain equity in pay or other sought-after rewards, there is a greater chance that learning will occur, and such learning will transfer to the job" (p. 55). Identifying and examining the factors considered valuable, barriers, and/or precursors to inequity is paramount to studying transfer of training.

Researchers suggested the need for the use of a theoretical frameworks in transfer of training studies (Baldwin & Ford, 1988; Noe, 1986; Yamnill & McLean, 2001). Both Expectancy and Equity theories were well cited within the literature as being appropriate frameworks for studying transfer of training as they incorporate the individual and work environment factors needed to motivate an employee to transfer skills and knowledge gained in training (Baldwin & Ford, 1988; Noe, 1986; Yamnill & McLean, 2001).

Summary

The review of the literature provided a theoretical base and foundation for studying and understanding factors known to impact transfer of training. Previous models and transfer of training studies discussed reveal the complex nature of studying transfer of training. Probation officer training is an ongoing process with goals important to the organization, officers, and the community. This review of the literature highlighted the major models and factors of transfer of training and the relevant research supporting the need for further studies across various organizations. The lack of training research among probation officers was an identified gap within the literature that required further investigation and study. One of the first steps in addressing the transfer of training problems is the identification of the factors impacting an organization and the examination of how those factors impact transfer of training. The following chapter outlines the methods utilized to study the factors impacting transfer of training among probation officers in North Carolina.

CHAPTER 3: METHODS

This research study involved the identification and evaluation of factors impacting perceived transfer of training among North Carolina Probation Officers. In order to fully understand what makes a training program effective; it is essential for organizations to evaluate the factors affecting transfer of training (Axtell, Maitlis, & Yeara, 1997). To date, limited to no research has been presented to study these factors within Probation Officer training. The purpose of this study was to identify and examine the individual and work environment factors among North Carolina probation officers that influenced a trainees' transfer of learning to the job. The study utilized a cross sectional quantitative survey design administered to participants through an internet survey to identify and explore the factors affecting transfer of training among probation officers and the relationships of individual and work environment factors on perceived transfer of training. This chapter includes a discussion of the research design and methodology used in this study. An overview of the population and sample is included along with a discussion of the instrumentation. Information and research on the learning transfer system inventory (LTSI) as a measurement tool for transfer of training is also provided. Lastly, the data collection and data analysis techniques utilized in the study are discussed.

Research Design

The study used a quantitative survey design to collect information at one point in time on a single questionnaire. The quantitative survey design was utilized to allow for the collection of information on trends, attitudes, and opinions of a sample of the population (Creswell, 2014). The survey method also required minimal time to assemble and collect data (Dillman, Smyth, & Christian, 2014) and allowed the researcher to access a greater portion of the population within a

shorter timeframe using an internet survey emailed to participants, which is one of the least invasive methods of research (Creswell, 2014).

The purpose of this study was to identify transfer factors and test the proposed relationships identified in Figure 1.2 of the factors impacting transfer of training among North Carolina probation officers. The study addressed the following questions:

Research Question 1: What individual characteristics, both personal and motivational as measured by the LTSI, can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

Research Question 2: What work environment factors as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

Research Question 3: What are the individual personal characteristics, work environment factors, and individual demographic factors (age, degree type, and tenure) that have a statistically significant relationship to North Carolina probation officers' attitudes towards factors affecting transfer of training to the job?

Research Question 4: What individual demographic, individual personal characteristics, motivational inputs, and work environmental factors as identified by the LTSI can be used to explain a significant proportion of the variance in perceived transfer of training among North Carolina probation officers?

Descriptive statistics, simple correlation techniques, and regression analysis was utilized to evaluate the model and proposed research questions.

Population and Sample

This study examined transfer of training among certified North Carolina probation officers. North Carolina probation officers are considered state employees and work under the Department of Public Safety within the Division of Adult Community Corrections.

Population. The target population for this study was all full-time certified Probation Officers employed with the North Carolina Department of Public Safety (NCDPS). According to the NCDPS website, North Carolina has approximately 2,000 certified probation officers (NCPDS, 2015) of various ethnic backgrounds, gender, experience, and age (over 21 years of age as required by the NCDPS). Officers are divided amongst four divisions that align with North Carolina judicial districts and are located throughout North Carolina within 273 field offices (NCDPS, 2015). Officers were identified through online public record searches of government employees and in collaboration with various North Carolina probation officers with access to employee lists.

The initial search identified 2,286 probation officers with the titles of Judicial Service Coordinator, Probation/ Parole Officer II, and Chief Probation Officer. The researcher did not include any clerical staff or administrative staff above the rank of Chief Probation Officer because the training requirements are not the same.

Sample. Studies need to utilize an adequate sample size to ensure reliable results of the data analysis (Hair, Black, Babin, & Anderson, 2013). The needed sample size for this study was initially calculated using the estimated 2,000 certified probation officers reported by NCDPS. Using Bartlett, Kotrlik, and Higgins (2001) table for determining minimum returned sample size for categorical data, the sample size needed to be 323. Estimating a 30% response rate, a total of

1076 participants needed to be sampled. However, due to the low cost of administering the online survey, the availability of all the email addresses, and the sample size needed to conduct regression analysis, the survey was emailed to all 2,286 identified certified NC probation officers. According to Bartlett et al. (2001), regression analysis needs between a 5 to 1 and 10 to 1 ratio of regressors to participants. The regressors included age, type of educational degree (Criminal Justice or other), job tenure, and the selected LTSI constructs (12) totaling 16. This indicated that a minimum of between 80 and 160 participants were needed. Hair et al. (2013) suggested between a 15 to 1 and 20 to 1 ratio which increased the number of participants needed to 240 to 320.

Of the 2,286 email addresses identified and sent the survey, 30 emails were identified as duplicates, 10 emails bounced back, and 15 emails were returned directly to the researcher advising that they were not probation officers or had transferred positions reducing the total number of the sample population to 2,231. Of those receiving the email, 538 officers opened the survey and 387 of those completed survey. Ten of those participants failed to provide consent, thus their responses were not included in the analysis.

Probation Officer Training Program

Probation officers must undergo at least forty hours of mandated in-service training each year to maintain North Carolina Criminal Justice certification as a probation officer (NCDPS, 2015). The same forty hours of training is mandated each year for all probation officers currently employed with the Department of Public Safety.

In the fall of 2016 and spring of 2017, probation officers were required to attend several mandated in-service training courses over the course of three days. These trainings included

Firearms certification, Control, Restraints, and Defensive Tactics (CRDT), OC Pepper Spray refresher, Staff and Offender Relations, Unlawful Workplace Harassment, and Ethical Behavior On and Off Duty. Although each of these trainings provided individual objectives and knowledge and skills probation officers should transfer back to the job, a specific training was selected to examine because transfer system factors are found to vary depending on the training program and may exhibit a different set of significant factors relating to transfer depending upon the training program (Bates & Holton, 2004). CRDT training was chosen as the specific training to examine because it is considered a technical training where participants can clearly define the use and transfer of learned knowledge and skills. Technical training is preferred over interpersonal training because research indicates it exhibits strong transfer (Bates & Holton, 2004). CRDT is a six-hour block of instruction administered by certified training instructors with specialized certification in the specific course content. Probation officers engage in hands-on tactical training that reinforces handcuffing, restraint, take down methods, offender escort procedures, defensive stances and movements, and tactical skills. Probation officers must demonstrate the ability to properly perform the required skills and tactics to the instructors in order to successfully complete the training program.

Instrumentation

This study utilized the LTSI survey administered at a single point in time to measure the factors associated with transfer of training. The LTSI was used to collect data on the independent variables within the study. Permission to use the survey for the purposes of this study was obtained through email consent from Dr. Reid Bates, co-author of the instrument. Due to copyright, a copy of the survey cannot be provided with this study. The LTSI has been

administered to a database of over 10,000 respondents from 20 different countries representing a wide variety of industries, jobs, company types, and levels of employees (Bates & Holton, 2012). Additional sections were added to the survey to collect information on the dependent variable (perceived transfer of training) and to collect the additional demographic information needed for the purposes of this study.

The following sections provide an overview of the LTSI, including the validity and reliability of the instrument. A discussion of the additional demographic and perceived transfer of training sections added to the survey is also provided.

Learning Transfer System Inventory (LTSI). The Learning Transfer System Inventory (LTSI) is based upon the work of Noe (1986), Mathieu, Tannenbaum, and Salas (1992), and Rouiller and Goldstein (1993); and was created in response to Baldwin and Ford's (1988) diagnosis of the criterion problem in evaluating and measuring transfer constructs (Holton, Bates, & Ruona, 2000). Developed in 1996 by Bates and Holton as a generalized transfer climate instrument, the LTSI to be utilized for this study is a fourth generation, 48-item survey utilizing a continuous 5-point Likert scale to measure factors associated with transfer of training (Holton, Bates, Bookter, & Yamkovenko, 2007). The scale ranges from 1 (strongly disagree) to 5 (strongly agree) with 3 representing "neither agree nor disagree". The LTSI is used as a diagnostic tool to assess the strengths and weaknesses of the organizational transfer system by assessing a set of 16 factors across three domains of trainee characteristics, work environment, and ability that influence the transfer of learned material in training to the job setting (Holton, Hsin-Chih, & Naquin, 2003). Tables 3.1, 3.2, and 3.3 identifies and describes the 12 factor scales measured by the LTSI to be utilized in this study. The items are further subdivided into

Training specific and Training in general domains (Holton et al., 2000). Table 3.1 identifies and describes the trainee characteristics scale items.

Table 3.1: LTSI Scale- Trainee Characteristics Descriptions

Scale Name	Scale Definition	Scale Description
Learner Readiness	The extent to which individuals are prepared to enter and participate in a training program.	This factor addresses the degree to which the individual had the opportunity to provide input prior to the training, knew what to expect during the training, and understood how training was related to job-related development and work performance.
Performance Self-Efficacy	An individual's general belief that they are able to change their performance when they want to.	The extent to which individuals feel confident and self-assured about applying new abilities in their jobs, and can overcome obstacles that hinder the use of new knowledge and skills.

Table 3.2 identifies and describes the LTSI scale items related to motivation. These items measure a trainee's motivation to learn and transfer learned skills back to the job.

Table 3.2: LTSI Scale- Motivation Descriptions

Scale Name	Scale Definition	Scale Description
Motivation to Transfer Learning.	The direction, intensity and persistence of effort toward utilizing in a work setting skills and knowledge learned in training.	The extent to which individuals are motivated to utilize learning in their work. This includes the degree to which individuals feel better able to perform, plan to use new skills and knowledge, and believe new skills will help them to more effectively perform on-the-job
Transfer Effort— Performance Expectations	The expectation that effort devoted to transferring learning will lead to changes in job performance.	The extent to which individuals believe that applying skills and knowledge learned in training will improve their performance. This includes whether an individual believes that investing effort to utilize new skills has made a difference in the past or will affect future productivity and effectiveness.
Performance—Outcomes Expectations	The expectation that changes in job performance will lead to outcomes valued by the individual.	The extent to which individuals believe the application of skills and knowledge learned in training will lead to recognition they value. This includes the extent to which organizations demonstrate the link between development, performance, and recognition, clearly articulate performance expectations, recognize individuals when they do well, reward individuals for effective and improved performance, and create an environment in which individuals feel good about performing well.

Table 3.3 identifies and describes the LTSI work environment scale items. Work environment factors affect the extent to which trainees apply learned knowledge and skills to the job setting (Tziner et al., 2007)

Table 3.3: LTSI Scale- Work Environment Descriptions

Scale Name	Scale Definition	Scale Description
Performance Coaching	Formal and informal indicators from an organization about an individual's job performance	The extent to which individuals receive constructive input, assistance, and feedback from people in their work environment (peers, employees, colleagues, managers, etc...) when applying new abilities or attempting to improve work performance. Feedback may be formal or informal cues from the workplace.
Supervisor/Manager Support	The extent to which managers support and reinforce the use of learning on-the-job.	This includes managers' involvement in clarifying performance expectations after training, identifying opportunities to apply new skills and knowledge, setting realistic goals based on training, working with individuals on problems encountered while applying new skills, and providing feedback when individuals successfully apply new abilities.
Supervisor/Manager Opposition	The extent to which individuals perceive negative responses from managers when applying skills learned in training.	This includes when managers oppose the use of new skills and knowledge, use techniques different from those taught in training, do not assist individuals in identifying opportunities to apply new skills and knowledge, or provide inadequate or negative feedback when individuals successfully apply learning on-the-job.
Peer Support	The extent to which peers reinforce and support use of learning on-the-job.	This includes the degree to which peers mutually identify and implement opportunities to apply skills and knowledge learned in training, encourage the use of or expect the application of new skills, display patience with difficulties associated with applying new skills, or demonstrate appreciation for the use of new skills.

Table 3.3 continued

Resistance to Change	The extent to which prevailing group norms are perceived by individuals to resist or discourage the use of skills and knowledge acquired in training.	This includes the work groups' resistance to change, willingness to invest energy to change, and degree of support provided to individuals who use techniques learned in training.
Personal Outcomes-Positive	The degree to which applying training on the job leads to outcomes that are positive for the individual.	Positive outcomes include: increased productivity and work effectiveness, increased personal satisfaction, additional respect, a salary increase or reward, the opportunity to further career development plans, or the opportunity to advance in the organization.
Personal Outcomes— Negative	The extent to which individuals believe that if they <u>do not</u> apply new skills and knowledge learned in training that it will lead to outcomes that are negative.	Negative outcomes include: reprimands, penalties, peer resentment, reassignment to undesirable jobs, or reduced opportunities for further job or career development.

(Bates & Holton, 2012)

The survey instrument is the most widely used in measuring transfer of training and exploratory factor analysis conducted with a large heterogeneous sample provides evidence of construct validity for the resulting 16 factors (Holton et al., 2000). Furthermore, the LTSI has continued to show both construct and criterion related validity (Bates & Holton, 2004). Each version of the instrument has undergone rigorous testing to further improve the instrument and its ability to accurately measure the factors affecting transfer of training (Bates, Holton, & Hatala, 2012).

The purpose of the instrument is to provide information about the workplace that may make training more effective (Bates & Holton, 2012). The instrument utilized for the purposes of this study was the fourth version of the LTSI based on extensive research within the field to ensure construct and criterion-related validity (Bates & Holton, 2012). Having a valid and reliable measure enhances transfer as it allows practitioners to:

- “Assess potential transfer factor problems prior to conducting major learning interventions.
- Follow up on evaluations of existing training programs.
- Investigate known transfer problems.
- Target interventions designed to enhance transfer.
- Incorporate evaluation of transfer as part of regular employee assessments.
- Conduct needs assessment for training programs to provide transfer skills to supervisors and trainers.” (Holton, Bates, Bookter, and Yamkovenko, 2007, p. 387)

Validity. Numerous studies have been conducted testing the validity of the LTSI.

Validity refers to the “extent to which a measure or set of measures correctly represents the concept of study...” (Hair, Black, Babin and Anderson, 2013, p. 3). The LTSI is proven to have both construct and criterion-related validity (Bates & Holton, 2004). The LTSI has shown evidence of both convergent and divergent validity (Holton, Bates, Bookter, & Yamkovenko, 2007). The constructs found to affect transfer of training is based on previous research and transfer models (Holton, Bates, & Ruona, 2000). In testing the validity of the instrument, Holton, et al. (2007) reviewed transfer literature to identify comparison measures from a variety of other instruments that measured related but different constructs. The study examined fourteen of the

sixteen LTSI scales and found relatively low correlations between the LTSI and comparison scales confirming the instrument measures unique constructs (Holton et al., 2007). The study further conducted an exploratory factor analysis and found all items to load at .30 or higher with most loading higher than .40 which was very similar to previously conducted factor analysis results (Holton et al., 2007).

Bates, Holton, and Hatala (2012) further tested the validity of version four of the LTSI by utilizing both exploratory and confirmatory factor analysis to provide a much more powerful test for validity. The study utilized 5,990 participants from 17 countries and again found strong support for the 16-factor structure of the LTSI. The participants were divided into two equal groups (exploratory and confirmatory samples) to allow for both exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Bates, Holton, and Hatala (2012) individually tested the training specific and training in general domains which resulted in strong factor loadings ranging for .50 to .86 for the training specific domain and .52 to .83 for the training in general domain. Estimated correlations between the factors were low to moderate ranging from .00 to .55 with an inter-scale correlation of .24 providing evidence of discriminant validity for the current version (Bates, Holton, & Hatala, 2012). The results of this research resulted in the current 48-item LTSI scale.

Several studies have also provided evidence of criterion-related validity for the LTSI. Seyler, Holton, Bates, Burnett, and Carvalho (1998) found strong criterion-related validity for individual variables and environmental factors (opportunity to use, peer support, supervisor sanctions, and supervisor support) to motivation to transfer in a study of computer-based training. The hierarchical regression model explained 60.5% of the variance for motivation to

transfer to training (Seyler et al., 1998). A later study on standard operating procedures after a computer-based training also used regression analysis and found content validity, peer support, change resistance, and supervisor sanctions to be significant predictors of performance ratings (Bates, Holton, Seyler, & Carvalho, 2000).

The LTSI was translated and validated across multiple disciplines and cultures. The administration of the LTSI to 328 French participants from six companies (one government and five private) in Belgium replicated the 16 original factors (Devos, Dumay, Bonami, Bates, & Holton, 2007). The LTSI has further been replicated and cross-culturally validated in other countries including Taiwan (Chen, Holton, & Bates, 2005), Jordan (Khasawneh, Bates, & Holton, 2004), Germany (Bates, Kauffeld, & Holton, 2007), and the Ukraine (Yamkovenko, Holton & Bates, 2007). The replication of the factor constructs across various cultures is evidence of external validity and ability of the instrument to be generalized to various populations.

Reliability. Version four of the LTSI has also shown strong reliability estimates as well. Reliability refers to the “extent to which a variable or set of variables is consistent in what it is intended to measure” (Hair et al., 2013, p. 2). The study conducted by Bates et al. (2012, p. 562) reported Cronbach alpha reliability estimates ranging from $\alpha = .71$ to $\alpha = .85$ across both the training specific and training in general domains. Table 3.4 lists the reliability estimates for each of the 12 constructs included in this study as measured by the LTSI subdivided into the training specific and training in general domains as reported by Bates et al. (2012).

Table 3.4: LTSI Reliability Estimates by Domain

Training Specific Scales	
Scale Name	Cronbach' s Alpha
Opportunity to use	.79
Motivation to transfer	.78
Learner readiness	.71
Supervisor support	.84
Supervisor opposition	.83
Peer support	.83
Personal outcomes positive	.83
Personal outcomes negative	.81
Training in General Scales	
Scale Name	Cronbach' s Alpha
Performance self- efficacy	.75
Transfer effort performance	.75
Performance outcome expectations	.72
Performance coaching	.85
Resistance to change	.80

Perceived Transfer of Training and Demographic Measures

Additional measures were needed to assess perceived transfer of training because the LTSI is a diagnostic tool designed to identify barriers and catalyst to the transfer system and is not designed to measure actual or perceived transfer. Furthermore, although the LTSI does include measures for certain demographic factors, it did not include information on all the demographic variables of interest to this study. As a result, additional sections were needed to fully answer the research questions proposed in this study.

Perceived transfer of training measures. Questions designed to measure perceived transfer of training were developed by the researcher and the committee chair based upon previous research and the use of similar questions found to be valid measures of perceived transfer (Axtell, Maitlis, and Yearta, 1997; Chiaburu & Lindsay, 2008; Facticeau, Dobbins, Russell, Ladd, & Kudish, 1995; Hutchins, Nimon, Bates, & Holton, 2013; Xiao, 1996). Each of

these studies utilized similar self-report measures of perceived transfer. Velada, Caetano, Michel, Lyons, and Kavanagh (2007) argued trainees are the most important and valid source of measurement of their job behavior and trainee self-report data can provide similar results to those as measured by other sources.

The use of these self-reported transfer of training measures has also been found to provide some evidence of validity across studies. Xiao (1996) examined the relationship between organizational factors and transfer of training in China utilizing self-reported perceived transfer of training measures and reported high Cronbach alpha and standardized alpha coefficients for transfer behavior of .83 and .83, respectively. Axtell, Maitlis, and Yearta (1997) found self-report measures of transfer of training and managerial observational reports of actual transfer to be highly correlated at .38 after one month and .70 after one year, indicating some confirmation of the validity of self-report transfer of training measures. Similar items as utilized in previous studies were developed to measure perceived transfer of training for this study. The questions utilized to measure perceived transfer of training are listed below. The training specific measures were developed in conjunction with the Office of Staff Development and Training CRDT certified instructors to specifically measure the perceived transfer of training objectives administered within the specific CRDT training course. The questions were designed to measure perceived transfer of training for the specific CRDT training and training in general across all training programs administered by the department. The perceived transfer of training questions were added to the end of the LTSI as an additional section with new instructions.

Training specific questions. The training specific questions were developed using the stated objectives and actual procedures taught during the course of the training program.

Questions were based on the procedures officers utilize on a daily or regular basis during the execution of their job duties. The following questions were developed to measure perceived transfer of training for the specific identified CRDT training program:

1. I consistently utilize the posture, position, stance, and patterns of movement as taught in CRDT training when interacting with offenders on the job.
2. My fellow probation officers consistently utilize the posture, position, stance, and patterns of movement as taught in CRDT training when interacting with offenders on the job.
3. I consistently utilize the offender escort techniques as taught in CRDT training when dealing with offenders on the job.
4. My fellow probation officers consistently utilize the offender escort techniques as taught in CRDT training when dealing with offenders on the job.
5. I apply handcuffs as taught in CRDT training when restraining offenders on the job.
6. When it is necessary to restrain offenders with handcuffs on the job, my fellow probation officers consistently apply handcuffs as taught in CRDT training.

Training in general questions. The training in general questions were designed to measure an officer's transfer of training across all trainings conducted within the department. The following questions were developed to measure perceived transfer of training for training in general administered within the department:

1. I actively utilize the knowledge and skills gained in training courses on the job.
2. Supervisors, peers, or subordinates have told me that my job behavior has improved following training courses.

3. I have changed my job behavior as a result of the material taught in training courses.
4. My job behavior is consistent with the material taught in training courses.

The perceived transfer of training measures for this study utilized the same format as the LTSI to maintain consistency throughout the questionnaire. The scale was designed to measure the extent to which participants perceive they have transferred learned material to the job setting. Participants were asked to rate both training specific and training in general statements. Participants rated statements on a continuous 5-point Likert scale to measure perceived transfer of training. The scale ranged from 1 (strongly disagree) to 5 (strongly agree) with 3 representing “neither agree nor disagree.”

Demographic measures. The additional demographic information questions were administered to gather information relating to the additional individual personal variables of interest in this study. Participants were asked their age, gender, type of educational degree (Criminal Justice or other), job title, and tenure as a North Carolina probation officer. The demographic questions were added as the first section of the LTSI and are explored in further detail in the next chapter.

Data Collection

Once permission was received from the North Carolina State University Institutional Review Board (IRB), identified participants were sent an email invitation that included a link to the survey and detailed instructions. The LTSI was uploaded into Qualtrics, an online survey tool, and the additional demographic and perceived transfer of training questions were added to the beginning and end of the LTSI, respectively. Data collection utilized the implementation guidelines as set forth by Dillman, Smyth, and Christian (2014). The use of an internet survey

allowed the researcher the ability to gather responses from a large number of participants in a relatively short time frame (Dillman et al., 2014).

The survey was initially entered into Qualtrics and tested among several graduate students and probation training officers not included in the sample to ensure the survey was delivered appropriately and was easily readable across various platforms and browsers (Dillman et al., 2014). No prior notice to the survey was given as this is rarely given when implementing a web survey (Dillman et al., 2014). The email provided a detailed explanation of the study; and further informed participants of the risks associated with the research and provided the contact information of the researcher. The email invitation is included in Appendix B. Participants who agreed and volunteered to participate were directed to access and complete the survey through the link provided within the email.

Participants not completing the survey within one week were sent additional follow-up emails for the next two consecutive weeks during the data collection period. The first follow-up email was sent one week after the initial email and reminded participants of the invitation and asked those who had not yet responded to do so (Dillman et al., 2014). A second reminder email was sent two weeks after the initial invitation to any non-respondents again reminding them of the survey and the importance of their responses. The second reminder email also advised participants that the survey would close after seven days and no further responses would be collected. Appendix C includes both follow-up emails sent to unfinished participants.

Any additional returned surveys from the follow-up emails were examined for significant differences from the initial respondents. Once the data collection period ended, the survey was

closed and all responses were examined, as suggested by Miller and Smith (1983), to compare early and late respondents as a method of examining non-response bias.

Data Analysis

The purpose of this study was to identify and examine the individual and work environment factors that influenced transfer of training to the job among North Carolina probation officers. The research examined the relationships of individual demographic and personal variables, and work environment variables with transfer of training among North Carolina Probation Officers by addressing the following four specific research questions:

Research Question 1: What individual personal characteristics, both personal and motivational, as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

Research Question 2: What work environment factors as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

Research Question 3: What are the individual personal characteristics, work environment factors, and individual demographic factors (age, degree type, and tenure) that have a statistically significant relationship to North Carolina probation officers' attitudes towards factors affecting transfer of training to the job?

Research Question 4: What individual demographic, individual personal characteristics, and work environmental factors as identified by the LTSI can be used to explain a significant proportion of the variance in perceived transfer of training among North Carolina probation officers?

Data analysis included descriptive statistics, correlations, and multiple regression analysis to identify the factors affecting transfer of training and those factors that help to explain the variance in perceived transfer of training among North Carolina probation officers.

Pre-data analysis. An essential aspect of multivariate analysis involves examining the data prior to performing the analysis. The data for this study was examined utilizing the steps as outlined by Hair et al. (2013). The data was examined for non-response bias, missing data, and outliers to determine any threats to the validity of the results. Any identified issues were further addressed utilizing methods as suggested by Hair et al. (2013).

To examine for non-response bias, early respondents were compared to late respondents based on the demographic and primary variables of the study (LTSI). A comparison of the means, commonly known as a *t*-test, was performed between early and late respondents and no significant differences were found between the two groups. Pre-data analysis also involved the removal of incomplete surveys ($n = 151$) and those not giving consent ($n = 10$) from the data set which reduced the sample size to 377. Participants who indicated their job titles were Judicial Services Coordinators or “other” staff and/or administrative personnel were also excluded from further analysis as these participants are not certified probation officers with the same training requirements. Further analyses was conducted for missing data utilizing descriptive statistics to identify cases and variables with missing information. Cases with missing data relevant to this study were deleted and not included in the analysis as they were well under the 10% threshold for missing data and did not significantly compromise the reliability of future analyses (Hair et al., 2013). Question 32 of the survey regarding supervisor meetings about ways to apply training was deleted from analysis as no responses were gathered on this question. The listwise deletion

method was used in all further descriptive analyses and pairwise deletion was used for the regression analysis.

Exploratory factor analysis was conducted to identify the underlying structures of the LTSI items. Principle components analysis was conducted utilizing a direct oblimin rotation. The analysis retained a total of 12 components. Factor loadings and the previous LTSI factor descriptions were utilized to identify and name components. Table 3.5 lists the identified factor names and survey items for each component.

Table 3.5: Factor distributions

Factors	LTSI Items
Motivation to transfer	Q12, Q13, Q14
Learner readiness	Q11, Q18, Q19
Supervisor support	Q31, Q36
Supervisor opposition	Q33, Q34, Q35
Peer support	Q28, Q29, Q12
Personal outcomes positive	Q15, Q16, Q17
Personal outcomes negative	Q22, Q25, Q26
Performance self- efficacy	Q55, Q56, Q57
Transfer effort performance	Q44, Q45, Q48
Performance outcome expectations	Q46, Q47, Q49
Performance coaching	Q53, Q54, Q58
Resistance to change	Q50, Q51, Q52

Reliability analysis of the factors were examined using exploratory factor analysis of the questions and Cronbach's alpha coefficients calculated to determine the reliability of instrument measures. Reliability estimates ranged from .73 to .86 for the LTSI identified factors. Table 3.6 provides the Cronbach's Alpha reliability estimates for all measures.

Table 3.6: Factor Reliability Estimates by Domain

Training Specific Scales	
Scale Name	Cronbach' s Alpha
Motivation to transfer	.78
Learner readiness	.74
Supervisor support	.73
Supervisor opposition	.84
Peer support	.86
Personal outcomes positive	.83
Personal outcomes negative	.81
Training in General Scales	
Scale Name	Cronbach' s Alpha
Performance self- efficacy	.74
Transfer effort performance	.81
Performance outcome expectations	.81
Performance coaching	.85
Resistance to change	.81
Perceived Transfer of Training Scales	
Scale Name	Cronbach' s Alpha
CRDT Transfer	.82
Training in General Transfer	.70

Outliers were identified utilizing regression analysis to test the Mahalanobis distances and those case exceeding the chi-square critical value were excluded ($n = 10$). The data was further examined to ensure that all assumptions for conducting multiple regression analysis (normality, homoscedasticity, linearity, and the absence of correlated errors) were met (Hair et al., 2013). Histograms, stem and leaf plots, normal Q-Q plots, and scatterplots were generated and examined for linearity and normality. All variables were statistically normal and skewness and kurtosis levels fell within the accepted means for all variables except learner readiness. Learner readiness showed a normal distribution but was slightly peaked and was transformed by

squaring (x^2) the original value (Hair et. al.). Repeat analysis with the squared variable revealed no further issues.

Once the data was examined and needed issues addressed, descriptive statistics were used to provide an overview of the respondents and the variables studied. Specifically, the means, standard deviations, frequencies, and percent were analyzed and reviewed on the population and variables under study. Further correlations and regression analysis was conducted to answer research questions three and four. Results and findings of these analyses are fully discussed in the following chapters.

Research questions 1 and 2 data analysis. To answer research questions one and two, descriptive statistics were run and the demographic, individual personal characteristics and work environment factors as measured by the LTSI that were thought to impact the transfer system among North Carolina probation officers are fully reported in the following chapter. The means, standard deviations, frequencies, and percent were calculated utilizing SPSS statistical software and reported for each variable of interest in this study.

Research question 3 data analysis. To answer research question three, *What are the individual personal characteristics, work environment factors, and individual demographic factors (age, degree type, and tenure) that have a statistically significant relationship to North Carolina probation officers' attitudes towards factors affecting transfer of training to the job?*, a bivariate correlation technique was utilized and the relationship between individual, work environment, and demographic factors and perceived transfer of training are reported. To complete this analysis, the means and standard deviations were calculated followed by t- test, ANOVA, and Pearson product moment correlation coefficient calculations to determine the

strength and direction of the relationships between the variables tested. The statistical significance (p value) and effect size for each relationship under study are reported. A p value of .05 is used as the level of significance as this is the standard level commonly used within the education discipline (Creswell, 2014). A value of $p < .05$ indicated the statistically significant relationships among the variables being studied. The effect size is a measure used to report the strength of a relationship or magnitude of a treatment effect (Kotrlik & Williams, 2003). Both p -values and effect sizes are reported in the next chapter.

Research question 4 data analysis. Multiple regression analysis was used to answer research question four, *What individual demographic, individual personal characteristics, and work environmental factors as identified by the LTSI can be used to explain a significant proportion of the variance in perceived transfer of training among North Carolina probation officers?*. Multiple regression analysis is used to examine if a significant relationship exists between a single dependent variable and a set of independent variables (Hair et al., 2013). Multiple regression analysis also allows the researcher to determine which independent variables explain a significant amount of the variance and can serve as predictors of the dependent variable (Hair et al., 2013). The stepwise estimation approach was utilized to assess the predictive ability of the independent variables identified to have significant correlations with the perceived transfer of training dependent variable. Only the variables identified as significantly correlated to the dependent variable were entered in the analysis. Three separate analysis were run for the perceived transfer of training dependent variable, these included training in general, training specific (CRDT), and total overall transfer. The stepwise estimation approach allowed the researcher to examine the contribution of each independent variable to the model. With this

approach, the independent variable that contributes the most to the model is added first and each additional independent variable is added sequentially based on contribution levels (Hair et al., 2013). To interpret the results of the analysis, the relationship of each independent variable (r), the variance explained by each independent variable (R^2) and beta coefficients (β) are examined and reported. The omitted independent variables are also reported in the following chapter.

Summary

The purpose of this study was to identify and examine the individual and work environments factors that impact transfer of training and the relationships of these factors for North Carolina probation officers. This study utilized a quantitative survey research design on a sample of certified North Carolina probation officers. Participants were administered the LTSI, a previously validated instrument, through Qualtrics, an online survey tool. Additional sections were added to the survey to measure additional demographic factors and perceived transfer of training. Once all data was collected and pre-data analysis was conducted, descriptive statistics, bivariate correlations, and multiple regression analysis were used to test the research questions proposed in this study. Results and findings of the analyses are reported in the following chapters.

CHAPTER 4: RESULTS

This chapter presents the results of the data analyses conducted to answer the four research questions proposed in this study. Certified probation officers from across the state of North Carolina completed an online survey about the factors affecting transfer of training to their jobs. A total of 347 certified probation officers were included in the analysis of the 48-item Learning Transfer Survey Inventory (LTSI) and additional demographic and perceived transfer of training questions about training in general across the organization and their yearly Control, Restrains, and Defensive Tactics (CRDT) training. Chapter 3 outlined the steps followed for this research study.

The purpose of this study was to identify and examine the individual and work environments affecting transfer of training among North Carolina probation officers. Presented below are the answers to the following research questions in this chapter:

1. What individual personal characteristics, both personal and motivational, as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?
2. What work environment factors as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?
3. What are the individual demographic factors (age, degree type, and tenure) that have a statistically significant relationship to North Carolina probation officers' attitudes towards factors affecting transfer of training to the job?
4. What individual demographic, individual personal characteristics, and work environmental factors as identified by the LTSI can be used to explain a significant

proportion of the variance in perceived transfer of training among North Carolina probation officers?

Probation officers throughout the state were invited to complete an online survey about factors affecting transfer of training to the job. Participants ranked 58 items on a Likert scale ranging from 1-5 (1 = strongly disagree and 5 = strongly agree). Data collected via Qualtrics, an online survey tool, was then entered into SPSS for statistical analysis. The survey questions aimed to identify factors affecting transfer among and to measure perceived transfer among probation officers.

Provided in this chapter is the results of the analyses conducted from the collected responses. Results provided below includes: demographic information of the participants, correlation analysis of the relationships of factors impacting transfer, and the regression analysis indicating the predictive ability of individual and work environment factors on transfer of training.

Demographics

Of the 347 completed surveys, 50.4% were male and 49.6 % were female ($n = 175$ and $n = 172$, respectively). As depicted in Table 4.1, the majority of the participants were White ($n = 208$, 59.9%) followed by Black or African American ($n = 119$, 34.3%).

Table 4.1: Frequency Distribution by Ethnicity

	<i>f</i>	<i>%</i>
White	208	59.94
Black or African America	119	34.29
Hispanic or Latino	7	2.02
American Indian or Alaska Native	7	2.02
Asian	1	0.29
Total	342	98.56
Missing	5	1.44
Total	347	100.00

Participants ranged in age from 23-60 years old and tenure as a North Carolina probation officer ranged from 0-30 years. Table 4.2 provides the minimums, maximums, means, and standard deviations for age and tenure.

Table 4.2: Range, means, and standard deviations for age and tenure

	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Age	0	64	40.65	9.99
Tenure	0	30	10.33	8.24

Certified probation officers in North Carolina also hold undergraduate degrees in a variety of majors. Of the officers participating in this survey, 231 (66.6 %) held degrees specifically relating to Criminal Justice (these included Criminology, Criminal Investigations in Criminal Justice, and Justice Studies) while the remaining 116 (33.4%) held degrees outside of the criminal justice field. North Carolina certified probation officers hold one of three different job titles: Chief probation officer, probation/parole officer II, or field training specialist. Most participants completing the survey identified as probation/parole officers II. This was expected

as they make up a higher percentage of the department. Table 4.3 displays the frequency and percent of job titles.

Table 4.3: Frequency Distribution by Job Title

	<i>f</i>	%
Probation/ Parole Officer 2	272	72.10
Chief Probation/Parole Officer	72	19.10
Field Training Specialist	3	.80
Total	347	100.00

Participants were located throughout the four divisional areas with most participants working in Divisions 1 and 2. Table 4.4 depicts the distribution of participants by division.

Table 4.4: Frequency Distribution by Division

	<i>f</i>	%
Division 1	60	17.30
Division 2	82	23.60
Division 3	103	29.70
Division 4	102	29.40
Total	347	100.00

Individual Factors Impacting Transfer

Descriptive statistics calculating the mean scores of each of the individual personal characteristics provided answers to research question 1. Data were collected by the LTSI questionnaire using a Likert scale of 1 (strongly disagree) to 5 (strongly agree). Scores from each individual item were summated and then mean scores calculated across each factor. Summated factor scores had possible ranges from 3 to 15 with a score of 3 indicating strong disagreement

on all items within the factor and a score of 15 indicating strong agreement on all items within the factor. The individual personal characteristics consisted of trainee characteristics (learner readiness and performance self-efficacy) and motivational factors (motivation to transfer, transfer-effort performance and performance-outcome expectations). To determine the participants' perceptions and attitudes of their individual abilities and motivation to transfer training, descriptive statistics were calculated and are provided following the discussion in Table 4.5.

Trainee Characteristics. Trainee characteristics included items on learner readiness and performance self- efficacy. Learner readiness addressed the extent to which participants felt they were prepared to enter and participate in a training, knew what to expect during training, and how the training related to their jobs (Bates & Holton, 2012). Scores ranged from 1 to 5 with a mean score of 3.91 ($SD = .62$) indicating that on average participants were neutral or slightly agreed and believed they were prepared for trainings, saw the relevance of the training to their jobs, and felt capable of learning the information provided during training programs.

Performance self- efficacy measured the participant's belief in their ability to change their performance when they desire and the extent to which they felt confident in applying new skills learned in training and overcoming obstacles that may prevent or hinder the use of information gained from training (Bates & Holton, 2012). Performance self- efficacy scores ranged from 2-5 with a mean score of 3.76 ($SD = .59$). Participants seemed to be neutral or slightly agree with scores a little above the middle of the neutral range and felt confident in their ability to apply information learned in training. Overall, a slight majority of probation officers seemed to somewhat believe or feel they were prepared and capable of learning and applying

information gained in training as 56.9% ($n = 197$) of the scores fell in the 4-5 (agree to strongly agree) range while only 7.8% ($n = 27$) had scores under 3 indicating they disagreed.

Motivational characteristics. The motivational factors measured included motivation to transfer, transfer-effort performance and performance-outcome expectations. Each motivational factor included three items with possible scores ranging from 1-5 based upon the Likert scale scoring. Motivation to transfer measured the extent to which participants are motivated and plan to use skills learned in training on the job and their belief that the training will help them more effectively do their jobs (Bates & Holton, 2012). Motivation to transfer scores ranged from 1 to 5 with a mean score of 3.30 ($SD = .78$) indicating that probation officers are somewhat unsure of their motivation to transfer learning and are neutral about their motivational attitudes. Only 24.2% ($n = 84$) of the scores fell in the agree to strongly agree (4-5) range.

Transfer-effort performance measured the extent that officers believed transferring skills from training to the job would lead to changes in job performance and improve their performance (Bates & Holton, 2013). Transfer-effort performance scores ranges from 1.67-5 with a mean of 3.82 ($SD = .65$). This indicated officers tended to slightly agreed and believed that applying new skills in training would improve their job performance.

Performance-outcome expectations measured the extent to which probation officers believed applying skills learned in training to their jobs would lead to valued outcomes for them (Bates & Holton, 2012). On average, probation officers slightly disagreed that applying skills on the job would lead to outcomes they valued. Scores ranged from 1-5 with a mean of 2.65 ($SD = .86$). Over half of the participants had scores under 3 (56.2%, $n = 195$), indicating they did not believe applying skills would lead to valued outcomes for them.

Overall, probation officers did not seem to have strong attitudes in either direction relating to motivation to transfer training. All the motivational mean scores fell close to or within the neutral range with most scores indicating slight agreement.

The individual personal characteristic factors resulted in means ranging from 2.65 ($SD = .85$) to 3.91 ($SD = .62$). Table 4.5 lists the ranges, means, and standard deviations for each of the individual characteristics factors. Probation officers appeared to be neutral on the personal characteristics with scores on some factors indicating slight agreement.

Table 4.5: Individual characteristics score ranges, means, and standard deviations

Individual Characteristics Factors	<i>Range^a</i>		<i>M</i>	<i>SD</i>
	<i>Min</i>	<i>Max</i>		
Learner Readiness	1.00	5.00	3.91	.62
Transfer- effort performance	1.67	5.00	3.81	.65
Performance Self- Efficacy	2.00	5.00	3.77	.59
Motivation to Transfer	1.00	5.00	3.32	.78
Performance outcome expectations	1.00	5.00	2.65	.86

Note: 1= Strongly disagree, 2 = Disagree, 3= Neither Disagree or Agree, 4 = Agree, 5= Strongly Agree
a = average of scale response scores

Work Environment Factors Impacting Transfer

Descriptive statistics conducted utilizing SPSS were used to answer research question 2. Means and standard deviations calculated for each of the work environment factors provided the answer to which work environment factors can be identified as factors impacting transfer of training. The work environment variables included in this analysis were performance coaching, supervisor support, supervisor opposition, peer support, resistance to change, performance outcomes-positives, and performance outcomes-negative. All variables, with the exception of supervisor support, included three items with possible factor scores ranging from 1-5. Individual items were summated and then means calculated to determine factor scores. The summated

factor scores had possible ranges from 3 to 15 with a score of 3 indicating strong disagreement on all items within the factor and a score of 15 indicating strong agreement on all items within the factor. Supervisor support included two items with possible scores ranging from 1-5 on a Likert scale. Summated factor scores ranged from 2 to 10 with a score of 2 indicating strong disagreement on all items within the factor and a score of 10 indicating strong agreement on all items within the factor.

Performance coaching measured probation officer's perception of the extent of constructive input and feedback they receive from others in their work environment when they apply skills learned in training (Bates & Holton, 2012). Probation officer scores on this variable ranged from 1- 5 with a mean score of 2.86 ($SD = .85$). These scores indicated that overall probation officers slightly disagreed or were neutral on the extent to which they receive performance coaching within their work environments. The scores indicate that overall officers do not agree they receive performance coaching after training when they return to the job. Only 17.9% ($n = 62$) of the officers agreed or strongly agreed they received performance coaching.

Supervisor support measured the extent to which probation officers felt their managers supported and reinforced the use of learned skills from training on the job, this also included attitudes on supervisors clarifying performance expectations and providing feedback (Bates & Holton, 2012). Participant scores for supervisor support ranged from 1-5 with a mean score of 2.98 ($SD = .94$). The supervisor support scores indicated that probation officers are fairly neutral on their attitudes towards supervisor support with some officers feeling support from supervisors while others do not. Only 23.1% ($n = 80$) agreed or strongly agreed they had supervisor support while 37.9% ($n = 131$) disagreed or strongly disagreed.

Supervisor opposition measured the extent to which probation officers felt supervisors opposed the use of skills and knowledge gained from training or used techniques different from those taught in training (Bates & Holton, 2012). Scores on supervisor opposition ranged from 1-5 with a mean score of 1.97 ($SD = .80$). These scores indicated that probation officers disagreed with these statements and do not feel supervisor opposition when applying skills learned in training to the job.

Peer support measured the extent to which officers felt peers in the workforce supported, encouraged, and expected the application of learned skills to the job (Bates & Holton, 2012). Peer support scores ranged from 1-5 with a mean score of 3.61 ($SD = .71$). These scores indicated that officers are neutral or slightly agree that they are supported and encouraged by their peers when applying learned skills to the job. Here, 47.1% ($n = 163$) of the probation officers agreed or strongly agreed that they received support from their peers when transferring training to the job while only 11.8% ($n = 41$) disagreed with scores below a 3 on this factor.

Resistance to change measured the extent to which probation officers felt group norms of the organization resisted or discouraged the use of learned skills in training and the work groups' resistance to change (Bates & Holton, 2012). Scores on the resistance to change variable ranged from 1-4.67 ($M = 2.59$, $SD = .87$). These scores indicated that probation officers on average disagreed with these statements and do not feel there is a resistance to change within their work groups.

The performance outcomes-positive variable measured the extent to which probation officers felt transferring training to the job would result in positive outcomes including increased productivity, salary increase or reward, or opportunity for advancement (Bates & Holton, 2012).

Items in this category were statements about receiving rewards and recognition for the use of training. Scores on this variable also ranged from 1-5 ($M = 2.04$, $SD = .88$). Probation officers, as indicated by the performance outcomes-positive scores, did not feel that applying skills learned in training would result in positive outcomes for them on the job. Over half (78.1%, $n = 271$) of the probation officers had scores ranging from 1-2.67 which indicated they disagreed or strongly disagreed with the statements about received rewards and recognition for applying training.

The performance outcomes-negative variable measured the extent to which probation officers felt that not transferring learned skills in training would lead to negative outcomes such as reprimands, demotions, or reduced opportunities for career advancement (Bates & Holton, 2012). Items within this variable group included statements about being penalized or reprimanded for not using skills taught in training. Probation officer scores ranged from 1-5 ($M = 3.38$, $SD = .88$) with 25.1% ($n = 87$) of the officers with scores below 3 and 33.5% ($n = 116$) with scores in the 4-5 range. Probation officers seem to have mixed attitudes on the extent to which they are reprimanded or experience negative outcomes as a result not applying skills learned in training to the job.

The work environment factors resulted in means ranging from 1.97 ($SD = .80$) for supervisor opposition to 3.61 ($SD = .71$) for peer support. Overall probation officers tended to disagree or not have strong feelings in agreement with the majority of work environment factors. Supervisor opposition and performance outcomes- positive had the lowest scores indicating a clear disagreement with those statements. No scores indicated a clear agreement with any of the work environment factors. Table 4.6 lists the ranges, means, and standard deviations for the work environment variables.

Table 4.6: Work environment score ranges, means, and standard deviations

Work Environment Factor	<i>Range^a</i>		<i>M</i>	<i>SD</i>
	<i>Min</i>	<i>Max</i>		
Performance outcomes- negative	1.00	5.00	3.38	.88
Peer support	1.00	5.00	3.61	.71
Supervisor support	1.00	5.00	2.98	.94
Performance coaching	1.00	5.00	2.86	.85
Resistance change	1.00	4.67	2.59	.87
Performance outcomes- positive	1.00	5.00	2.04	.88
Supervisor opposition	1.00	5.00	1.97	.80

Note: 1= Strongly disagree, 2= Disagree, 3= Neither Disagree or Agree, 4= Agree, 5= Strongly Agree;
a = average of scale response scores

Perceived Transfer of Training

Perceived transfer of training scores measured transfer across two factors: CRDT specific training transfer and training in general transfer across the across the organization. Means and standard deviations were calculated for each of the perceived transfer factors. Scores from each individual item were summated and then mean scores calculated across each factor. All items utilized a Likert scale ranging from 1 - 5 (1 = strongly disagree; 5 = strongly agree). CRDT transfer included 6 items with possible scores for each item ranging from 1-5 on a Likert scale. Summated factor scores on the CRDT transfer factor had possible ranges from 6 to 30 with a score of 6 indicating strong disagreement on all items within the factor and a score of 30 indicating strong agreement on all items within the factor. Training in general transfer included 4 items with possible scores for each item ranging from 1-5 on a Likert scale. Summated factor scores on the training in general transfer factor had possible ranges from 4 to 20 with a score of 4 indicating strong disagreement on all items within the factor and a score of 20 indicating strong agreement on all items within the factor. A total transfer factor was computed as well and included all items in both the CRDT transfer and training in general transfer factors. Summated

factor scores on the total transfer factor had possible ranges from 10 to 100 with a score of 10 indicating strong disagreement on all items within the factor and a score of 100 indicating strong agreement on all items within the factor.

Mean scores on the perceived transfer factors ranged from 3.52 ($SD = .61$) to 3.61 ($SD = .70$) for training in general transfer and CRDT transfer, respectively. Perceived transfer of the CRDT training had the highest the average score but all scores were within the 3- 4 range indicating officer were slightly mixed about the amount of transfer they perceived within the organization. Approximately 37.5% ($n = 130$) agreed or strongly agreed that they were transferring skills learned in training to the job. However, only 13.5% ($n = 47$) indicated they were not transferring CRDT training back to the job. Although training in general transfer had the lowest average of perceived transfer, only 11% ($n = 38$) of officers had scores under 3 indicating felt they were not transferring training to the job for all trainings. Approximately 22.3% ($n = 77$) of the officers indicated they agreed or strongly agreed (scores ranging from 4-5) that transfer was occurring for trainings in general across the organization. Table 4.7 lists the ranges, means, and standard deviations for the perceived transfer variables. These scores indicate that the majority of officers are either unsure or disagree that they are transferring skills learned in training back to the job.

Table 4.7: Perceived transfer score ranges, means, and standard deviations

Perceived Transfer Factor	<i>Range^a</i>		<i>M</i>	<i>SD</i>
	<i>Min</i>	<i>Max</i>		
CRDT Transfer	1.00	5.00	3.61	.70
Training in General Transfer	1.00	5.00	3.52	.61
Total Transfer	1.00	5.00	3.57	.58

Note: 1= Strongly disagree, 2= Disagree, 3= Neither Disagree or Agree, 4= Agree, 5= Strongly Agree;
a = average of scale response scores

Correlation Analyses

Pearson product-moment correlation coefficients (r) were computed to evaluate if relationships existed between the individual demographic variables (age, degree type, and tenure) and the perceived transfer of training variables. The dependent variables were calculated from the perceived transfer items and factored into two variables using a mean score across the items for analysis (training in general transfer and CRDT training transfer). An additional total transfer variable was also computed for analysis and included all perceived transfer of training items. Correlations were computed for each of the demographic variables and the three perceived transfer factors. Table 4.8 displays the correlations for each of the variables. Results indicated that age ($r = -0.13, p < .05$) and tenure ($r = -0.17, p < .01$) correlated with the training in general transfer variable, but with very small effect sizes. All correlations with the exception of degree type and CRDT specific training transfer were negative correlations. No demographic variables significantly correlated with CRDT transfer or overall total transfer.

Table 4.8: Correlations of demographic variables with perceived transfer variables

Demographic Variables	CRDT Transfer	Training in General Transfer	Total Transfer
Age	-.003	-.127*	-.054
Tenure	-.030	-.169**	-.091
Degree Type	.024	-.049	-.002

* $p < .05$; ** $p < .01$

Additional correlations were conducted to determine which LTSI factors significantly correlated with the perceived transfer variables. Items from the LTSI were factored into 12 variables using mean scores across each factor within three categories (individual trainee characteristics, motivational characteristics, and work environment characteristics). Table 4.9

displays the results of these correlations. All variables with the exception of personal outcomes-negative were significantly correlated with all three perceived transfer dependent variables.

Transfer effort-performance (a motivational characteristic) was the most highly correlated LTSI variable ($r = .52, p < .01$) with total transfer and training in general transfer ($r = .57, p < .01$) and the second highest with CRDT transfer ($r = .39, p < .01$). Performance self-efficacy (a trainee characteristic) was the most highly correlated with CRDT transfer ($r = .42, p < .01$). The effect sizes (r values) for significant variables ranged from .14 to .57 indicating small to moderate associations among the LTSI variables and perceived transfer (Kotrlík & Williams, 2003).

Table 4.9: Correlations of LTSI variables with perceived transfer variables

LTSI Variables	CRDT Transfer	Training in General Transfer	Total Transfer
<i>Individual trainee characteristics</i>			
Learner readiness	.20**	.14*	.20**
Performance self- efficacy	.42**	.34**	.45**
<i>Motivational characteristics</i>			
Motivation to transfer	.35**	.34**	.40**
Transfer effort- performance	.39**	.57**	.52**
Performance- outcomes expectations	.24**	.38**	.33**
<i>Work environment characteristics</i>			
Performance coaching	.19**	.29**	.26**
Supervisor/manger support	.29**	.36**	.36**
Supervisor opposition	-.17**	-.22**	-.22**
Peer support	.35**	.38**	.41**
Resistance to change	-.32**	-.14*	-.29**
Personal outcomes- positive	.17**	.30**	.25**
Personal outcomes- negative	-.02	.00	-.01

* $p < .05$; ** $p < .01$

Regression Analysis

To answer research question 4, stepwise multiple regression analysis was conducted to determine which independent variables might explain a significant proportion of the variance in perceived transfer of training. Specifically the analysis sought to determine if the linear combination of the LTSI factor variables and demographic variables would significantly explain the variance in perceived transfer of training among North Carolina probation officers. The predictor variables were the 11 computed LTSI factors and two demographic variables found to have significant correlations with the criterion variable, perceived transfer of training. Individual regression analysis was conducted for each of the perceived transfer of training dependent variables (CRDT training, training in general, and total transfer). Pre-data analysis screening led to the elimination of 10 cases as outliers. The evaluation of linearity led to the squared transformation of the learner readiness variable. All other assumptions of multivariate normality, multicollinearity, and homoscedasticity were met.

Regression analysis for the criterion variable, CRDT training (the training specific variable) indicated an overall model with four predictors (performance self-efficacy, motivation to transfer, transfer effort—performance, and resistance to change) that significantly predicted perceived transfer of CRDT training skills, $R = .56$, $R^2 = .31$, $R^2_{\text{adj}} = .30$, $F(4, 314) = 35.04$, $p < .001$. This model accounted for 31% of the variance in perceived transfer of CRDT training. Table 4.10 presents a summary of the regression model. Learner readiness, performance-outcomes expectations, performance coaching, supervisor/manager support, supervisor/manager opposition, peer support, personal outcomes-positive, and personal outcomes-negative were not significant predictors and were excluded from the model.

Table 4.10: Regression analysis for CRDT transfer

	Sums of Squares	df	Mean Square	F	p
Regression Residual Total					
$R^2 = .31$	43.10	4	10.78	35.04	.00
			B	Beta	t
(Constant)			1.83		6.61
					p
LTSI constructs					
Variables in Model					
Performance Self-Efficacy		.28	.25	4.83	.00
Motivation to Transfer		.17	.19	3.70	.00
Transfer Effort—Performance		.17	.16	2.95	.00
Resistance to Change		-.17	-.22	-4.64	.00
Variables not in model			B	Beta	t
Learner Readiness				.03	.56
Performance- Outcomes Expectations				.02	.27
Performance Coaching				.09	1.94
Supervisor/Manager Support				.09	1.76
Supervisor/Manager Opposition				.08	1.45
Peer Support				.09	1.55
Personal Outcomes-Positive				-.004	-0.08
Personal Outcomes—Negative				.07	1.39

Further stepwise regression analysis was conducted to determine which independent variables were predictors of training in general for probation officers. Regression analysis for training in general indicated an overall model with five predictor variables (performance self-efficacy, transfer effort-performance, performance outcome expectations, supervisor/ manager support, and performance coaching) that significantly predicted perceived transfer of training general, $R = .63$, $R^2 = .40$, $R^2_{adj} = .39$, $F(5, 313) = 42.03$, $p < .001$. Neither of the demographic variables entered into the model. This model accounted for 40% of the variance in perceived

transfer of training in general within the agency for probation officers. A summary of the training in general regression model is presented in Table 4.11. Transfer effort- performance was the biggest predictor of training in general, $\beta = .44$, $t(313) = 8.52$, $p < .01$, and accounted for 22.1% of the overall variance for perceived transfer of training in general. Learner readiness, motivation to transfer, supervisor/manager opposition, resistance to change, peer support, personal outcomes- positive, tenure, and age were not significant predictors and were excluded from the model.

Table 4.11: Regression analysis for training in general transfer

	Sums of Squares	df	Mean Square	F	p
Regression Residual Total					
$R^2 = .40$	39.55	5	7.91	42.03	.00
			B	Beta	t
(Constant)			1.09		5.76
					p
Variables in Model					
LTSI constructs					
Performance self- efficacy		.10	.11	2.27	.02
Transfer effort- performance		.38	.44	8.52	.00
Personal outcomes expectations		.04	.05	1.01	.31
Supervisor/ manager support		.09	.15	2.94	.00
Performance coaching		.09	.14	2.84	.01
Variables not in model			B	Beta	t
					p
LTSI constructs					
Learner readiness			.07	1.57	.12
Motivation to transfer			.03	.58	.56
Personal- outcomes positives			.06	1.18	.24
Supervisor/manager opposition			-.09	-1.85	.07
Resistance to change			.02	.32	.75
Peer support			.08	1.59	.11
Demographics					
Tenure			-.06	-1.43	.15
Age			-.04	-.81	.39

A final regression analysis was conducted to determine which independent variables significantly predicted perceived transfer of training overall for North Carolina probation officers. The significantly correlated LTSI variables were entered as independent variables and the total transfer factor was used as the criterion variable. Regression analysis for the criterion variable, total transfer, indicated an overall model with six predictors (performance self-efficacy, transfer effort-performance, motivation to transfer, supervisor/manager support, resistance to change, and performance coaching) that significantly predicted perceived overall transfer of training, $R = .65$, $R^2 = .42$, $R^2_{\text{adj}} = .41$, $F(6, 312) = 37.70$, $p < .001$. This model accounted for 42% of the variance in perceived overall transfer of training among probation officers. A summary of the regression model is presented in Table 4.12. Performance self- efficacy significantly predicted the greatest amount of variance in the model, $\beta = .23$, $t(312) = 5.79$, $p < .001$, and accounted for 19.9% of the overall variance for perceived transfer of training overall. Learner readiness, performance- outcomes expectations, personal outcomes- positive, supervisor/manager opposition, and peer support were not significant predictors and did not enter the model.

Table 4.12: Regression analysis for overall total transfer of training

	Sums of Squares	df	Mean Square	F	p
Regression Residual Total					
$R^2 = .42$	39.35	6	6.56	37.69	.000
			B	Beta	t
(Constant)			1.39		6.37
					p
Variables in Model					
LTSI constructs					
Performance self- efficacy		.21	.23	5.79	.000
Transfer effort- performance		.25	.30	5.81	.000
Motivation to transfer		.09	.14	2.71	.007
Supervisor/ manager support		.07	.11	2.27	.024
Resistance to change		-.09	-.15	-3.21	.001
Performance coaching		.07	.11	2.43	.016
Variables not in model			B	Beta	t
					p
LTSI constructs					
Learner readiness			.08	1.58	.12
Performance- outcomes expectations			-.01	-.12	.90
Supervisor/manager opposition			.00	-.001	.10
Peer support			.09	1.63	.10
Personal outcomes- positive			-.003	-.07	.94

Chapter Summary

Chapter 4 presented the analysis of the data analysis of 347 North Carolina probation officers' attitudes and perceptions of transfer of training factors. Participants responded to an online survey and quantitative data analysis answered four research questions. Descriptive statistics, correlation analyses, and regression analyses conducted revealed prevailing attitudes of probation officers in North Carolina pertaining to factors affecting transfer of training within their agencies.

Analyses revealed probation officers tend to feel more strongly about their own individual capabilities pertaining to transferring skills than they do about the work environment.

Scores on the trainee characteristic and motivation scales tended to be higher, on average, than scores for the work environment scales. Although most scores fell in the neutral range, none of the individual characteristic scales fell below a 2.5 to indicate complete disagreement.

All but one of the LTSI factors (personal outcomes-negative) significantly correlated with the perceived transfer of training of variables. Personal outcomes-negative did not significantly correlate with any of the perceived transfer of training variables. As indicated by mean scores for each of the scales, the highest correlations were among the trainee characteristics and motivational items. Correlation coefficients indicated small to moderate effect sizes among the LTSI variables. No demographic variables under study in this research significantly correlated with all three perceived transfer of training variables. However, age and tenure significantly correlated with the perceived transfer of training in general variable.

Regression analyses produced models that significantly predicted transfer of training for CRDT, training in general, and overall transfer of training. A combination of trainee characteristics, motivational factors, and work environment factors entered into each of the models. Performance self-efficacy and transfer effort performance were the only two variables that entered into each model significantly and were the biggest predictors among each of the models.

Based on these analyses, probation officers feel individual and motivational factors are the most important factors relating to transfer of training. However, several work environment factors significantly entered models as well. The results indicate that different factors may possibly become important for different trainings. Chapter 5 presents a full discussion of these results, implications for practice, and recommendations for future research.

CHAPTER 5: FINDINGS, RECOMMENDATIONS, AND IMPLICATIONS

This study sought to evaluate the perceptions and attitudes among North Carolina probation officers about factors affecting transfer of training within their agency. Although there are numerous research studies on transfer of training, little to no research conducted in the field of community corrections among probation officers surfaces. Furthermore, few studies have included variables such as age, tenure, and type of degree to evaluate the impacts of these factors on transfer. This study filled an important gap in the literature by including a discipline and additional variables rarely studied in transfer research.

Four research questions guided this study and descriptive statistics, bivariate correlations, and multiple regression analysis were used to answer the research questions proposed. Results from the analyses were discussed in the previous chapter and can be used by probation training and standards department to identify gaps and needs in their training programs to improve training for officers. By identifying the factors that affect training transfer, the department can then begin to target those areas that would assist in the improvement of transfer of training. This study provides a foundation for training and development to identify issues with training programs. This chapter provides a discussion of the findings, implications for practice, and recommendations for future research.

Discussion of Findings

This study sought to identify those factors affecting transfer of training among certified North Carolina probation officers and examine the relationships among those factors and perceived transfer of training. Probation officers throughout North Carolina received an email invitation to complete an online questionnaire assessing their attitudes and perceptions of

transfer. The Learning Transfer System Inventory (LTSI), a previously validated instrument, gathered data on officers' attitudes about transfer factors (trainee characteristics, motivational factors, and work environment factors). Additional questions gathered data on demographic variables and perceived transfer of training. Chapter 3 provided details on the data collection methods. Findings from this study indicated a relationship between perceived transfer of training and all but one of the LTSI identified factors (personal outcomes-negative).

Research question 1. What individual personal characteristics, both personal and motivational, as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

The personal individual characteristics of learner readiness and performance self-efficacy both had means that described probation officers as being close to agreeing to these factors. This indicated that probation officers generally feel they are aware of the reasons and need for trainings; and they feel confident in their abilities to use skills from training on the job. Consistent with previous research (Baldwin & Ford, 1988; Noe, 1986), learner readiness and performance self-efficacy surfaced as factors relevant to the transfer of training among probation officers.

The motivational factors of motivation to transfer and transfer-effort performance had similar results with mean scores in the 3-4 range (neutral to agree) on a 5-point scale. Motivation to transfer is an employee's desire to use skills gained in training on the job (Noe, 1986). Motivation is one of the most significant variables mediating the relationship between learning and transfer, as even learned skills may not be transferred or maintained on the job due to lack of motivation (Baldwin & Ford, 1988; Holton, 1996; Noe, 1986). Motivation to transfer was closer

to neutral with a mean score of 3.32. This indicated that officers are somewhat neutral when it comes to their motivation to transfer training, which can be concerning as past research shows a direct relationship between motivation to transfer and actual transfer. Transfer-effort performance was on the higher end ($M = 3.82$, $SD = .65$) indicating probation officers are close to agreeing that applying new skills and working harder will help them perform better on the job. However, without the motivation to apply and use the skills, it is unlikely officers will exert the effort. Performance outcome-expectations was the lowest among the individual characteristics and had a mean score under 3 indicating that officers were close to disagreeing with this factor. This indicated officers did not feel that good performance led to rewards on job. According to expectancy theory, motivation is influenced by both transfer-effort performance and performance outcome expectations (Vroom, 1964). Similarly, if officers' improved performance does not lead to rewards they may not be motivated to expend the effort to apply skills to improve their performance. Although these scores were close to the agreement range, overall they indicated a need for interventions to help officers better feel prepared and motivated to transfer skill to the job.

Research Question 2. What work environment factors as measured by the LTSI can be identified as factors impacting North Carolina probation officers' transfer of training to the job?

The work environment factors included items about the officer's work environment following their return from training(s). These included statements on supervisor support and opposition, peer support, resistance to change, feedback, reprimands, and on the job rewards such as salary increases and recognition. Overall, the work environment scores were lower than those for the individual characteristics indicating that officers may not have positive views of

their work environments. Mean scores on these factors ranged from 1.97 (disagree) to 3.61 (neutral to slightly agree). Important to note are those factors that fell closer to 2 (supervisor opposition and personal outcomes-negative) indicating officers disagreed with these statements. Supervisor opposition had the lowest score among all factors indicating officers do not feel their supervisors criticize them or discourage them from using skills learned in training. Overall, it appears that supervisors do not negate the techniques and skills learned, however, supervisor support only had a score of 2.98, indicating that officers tend not to agree that supervisors generally supported or encouraged the use of new skills or techniques. Also of note within the work environment factors is the performance coaching measure. Although not clearly in disagreement, the scores on this measure indicate that officers may not receive appropriate feedback and coaching when they return to the job after training(s). Performance coaching and feedback is important in the persistence of transfer of training. This includes advice and suggestions about how to do one's job better and improve performance. However, officers did almost agree ($M = 3.61$, $SD = .71$) that they received appreciation and support from their peers when using skills and techniques learned in training. This may be due in part to the organizational structure within probation departments where officers are assigned to units and small works groups 6-8 officers on a unit.

The work environment is seen as an important factor to transfer as this is where actual transfer happens (Seyler, Holton, Bates, Burnett, & Carvalho, 1998; Tannenbaum, Mathieu, Salas, & Cannon- Bowers, 1991). If the work environment is not supportive of transfer, even those motivated to transfer may find it difficult to apply skills learned in training consistently over time. Individuals may be motivated to transfer learned skills back to the job, but may be

discouraged or prevented from doing so due to issues within their work environment (Tannenbaum & Yukl, 1992). Because most work environment scores did not indicate clear agreement or disagreement, with the exception of supervisor opposition and personal outcomes-positive, these factors should be identified as areas of concern as the work environment is extremely important to transfer.

Research Question 3. What are the individual personal characteristics, work environment factors, and individual demographic factors (age, degree type, and tenure) that have a statistically significant relationship to North Carolina probation officers' transfer of training to the job?

Correlation analysis revealed statistically significant relationships among all but one of the LTSI variables and the perceived transfer variables. Personal outcomes-negative, a work environment factor, did not have a statistically significant relationship with any of the perceived transfer variables (CRDT training transfer, training in general transfer, total transfer). Performance self- efficacy yielded the strongest effect of all variables on the CRDT training transfer with a positive moderate effect size while transfer- effort performance, a motivational factor, yielded the strongest effect on training in general and total transfer.

Each of the individual and motivational characteristics displayed positive relationships with transfer. The more an officer felt they understood the reason for a training, were confident in their abilities to use new skills, and motivated to use skills, the more likely they were to perceive skills learned in training transferred to the job. These findings are consistent with previous research that emphasizes learner ability and motivational factors as major predictors of transfer. The strongest relationships across all transfer measures existed within the individual and

motivational factors. As previously mentioned, motivation consists of both transfer-effort and performance-outcomes expectations (Vroom 1964) and each of these measures yielded moderate to strong positive correlations.

Characteristics of the work environment include supervisory and peer support, feedback, and constraints, and opportunities to apply learned behavior to the job (Baldwin & Ford, 1988). Of the statistically significant work environment factors in this study, all yielded positive correlations except supervisor opposition and resistance to change. The majority of the work environment factors exhibited moderate correlations further stressing the importance of the work environment to transfer. Peer and supervisor support are defined as the reinforcement and support for the use of learned skills on the job by one's peers and supervisor and are some of the most notable factors used to examine the relationship between the work environment and transfer (Bates & Holton, 2012). Peer support and supervisor support among probation officers both yielded some of the strongest correlations across all perceived transfer outcome variables. Although somewhat contradictory in previous research yielding both negative and positive correlations (Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Seyler et al., 1998; Velada et al., 2007), supervisor support in this study yielded moderate positive correlations for CRDT transfer, transfer in general, and total transfer ($r = .29 p < .01$, $r = .36 p < .01$, and $r = .36 p < .01$, respectively). As evidenced by the significant relationships of the work environment factors and perceived transfer of training, this study supports the findings of Burke and Hutchins (2007) that the work environment is important to the effectiveness of training.

None of the demographic factors under study in this research yielded significant relationships with all three of the training transfer measures. Type of degree did not significantly

correlate with any of the transfer measures and age and tenure had negative low correlations with only the training in general transfer measure. This suggests that older officers and officers with more time within North Carolina probation are less likely to transfer skills learned in training. Although research suggests that these demographic factors may have mediating effects on transfer, this study did not find them to be of significant importance among probation officers.

Research Question 4. What individual demographic, individual personal characteristics, and work environmental factors as identified by the LTSI can be used to explain a significant proportion of the variance in perceived transfer of training among North Carolina probation officers?

Consistent with previous research this study found that various factors impacted perceived transfer of training across the different training type measures for perceived transfer. Performance self-efficacy, motivation to transfer, transfer-effort performance, and resistance to change accounted for 30.9% of the variance in the training specific (CRDT) transfer measure. Performance self-efficacy or one's belief in their ability to perform the skills, was the greatest predictor of CRDT transfer. This is possibly due to the fact that CRDT is a practical training and most of the skills learned in the training are hands-on physical skills. It is reasonable that one's ability to perform the skills would directly impact the application. Transfer system differences exist across various different training types and results from previous studies suggest that "different interventions might be needed for different training types within a single organization" (Holton et al., 2003, p.14-3).

Performance self-efficacy, transfer-effort performance, personal outcomes positives, supervisor support, and performance coaching accounted for 40.2% of the variance in training in

general transfer. Again, performance self-efficacy was the greatest predictor of training in general, however, it is interesting to note that additional work environment factors entered as predictors when looking at training in general in the organization. This suggests that although these may not be important predictors for transfer of practical skills, they are important for trainings overall which includes soft skills, computer skills, and case management training. When looking at the combined CRDT training and training in general (overall total perceived transfer of training), all factors previously entered as predictors for CRDT or training in general transfer again entered as predictors of transfer for probation officers. The combination of the previous seven predictor variables accounted for 42% of the variance in total transfer. Performance self-efficacy and transfer-effort performance remained the biggest predictors for perceived total transfer.

Based on the findings of this study, the best predictors for transfer among probation officers are individual and motivational characteristics. According to Noe (1986), trainees are motivated to transfer learned skills to the job when they feel confident in using the skills, know of appropriate work situations to use the skills, believe new skills will result in improved job performance, and believe that learned knowledge and skills are useful in solving work-related problems. An officer's belief in their ability to perform the required skills and perception that more effort leads to improved performance greatly determine transfer for probation officers. This study supports numerous research findings citing self-efficacy as a major predictor of transfer (Al-Eisa, Furayyan, & Alhemoud, 2009; Clasen, 1997; Tziner, et al., 2007; Velada et al., 2007).

The independent nature of probation officer work may also explain the significant importance of the individual characteristics. Officers work alone on cases and are expected to

perform the majority of their duties without the assistance of their peers. Only limited job duties require officers to work alongside their colleagues. Expectancy theory provides additional support for the emergence of performance self-efficacy and transfer-effort performance as these are two of the major concepts guiding the motivation to transfer learned skills, as behavior is defined as being a function of ones perceived expectations, abilities, and beliefs on achieving a perceived valued outcome (Vroom,1964).

Although the work environment factors were not the biggest predictors of transfer among probation officers, it is important to note that resistance to change, supervisor support, and performance coaching were significant predictors. These findings may be the result of the neutral scores on the presence of both these variables. Supervisor support received conflicting results in other research (Al-Eisa et al.,2009; Facteau et al., 1995; Kontoghiorghes, 2001; Seyler et al., 1998; Velada et al., 2007); however, this study found it to be a significantly positive correlate and predictor of transfer. However, peer support was not a significant predictor for any type of transfer and scores on this measure were somewhat higher, indicating officers did identify with peer support within their work environments. This is contradictory to other research as peer support has consistently been cited as an important variable in relation to transfer of training (Bates et al., 2000; Facteau et al., 1995; Seyler et al., 1998).

One explanation for this may be in the work environment structure of probation officers. Officers are placed within units of six to seven peers with one supervisor to whom they all report. This structure may make the supervisor support role more important to officers than their peers. Officers also work more independently in this environment so contact and assistance from peers may not be as pervasive within their work environments, thereby minimizing the effects of

peer support. Significant differences are found in transfer system characteristics across organizational types and these system differences work together and may be interchangeable with some elements compensating for others that are missing (Holton et al., 2003). For example, the close interactions and accessibility of supervisors among probation officers may mitigate the effects of peer support. Holton et al. (2003) supports this notion as they reported supervisor support to be a more powerful predictor of transfer than peer support within government agencies. Given the overall importance of a supportive work environment in prominent transfer models and research (Holton et al., 2003; Baldwin & Ford, 1988), there is a reduced likelihood of transfer within organizations with little evidence of a strong work environment.

Limitations

The current study examined the proposed relationship of individual and work environment characteristics among North Carolina probation officers. Only North Carolina probation officers participated in this study so the results are not generalizable to probation officers in other states or federal probation officers working within North Carolina. These results are also not representative of other organizations as transfer factors vary across disciplines and organizations.

Since this study did not focus on all the identified factors within the transfer system, other relationships were not examined which may have impacted overall transfer. For example, this study did not evaluate content validity and training design and any possible relationships with these variables and transfer. A more rigorous data analysis, other than correlations and multiple regression, could provide more detailed information about the relationships between variables as well, however, this study did not utilize this technique. Additionally, one question from the LTSI

on supervisor support was dropped from the analysis because data was not recorded on this item. Although supervisor support still factored with acceptable reliability, scores on this measure may not be an accurate depiction.

This study only collected data on perceived transfer at one point in time. Responses may be different among participants depending on when they attended CRDT training. Although data was gathered on when they attended to ensure officers had opportunity to transfer, differences were not controlled for in this study. Research indicated that transfer varies over time and amount of transfer typically decreases (Axtell et al., 1997)

Results from the study should be interpreted with caution as the researcher relied on self-report data as well as perceived transfer as a measure. An actual observational measure of transfer would certainly be a stronger measure, however, resources and privacy rights of offenders did not allow for the visitation and observation of officers. Self-reported data also introduced the threat of socially desirable responses. The use of a previously validated instrument prevented the researcher from testing and controlling for this bias.

Implications for Practice

The goal of any training program is to provide or enhance skills to improve job performance. Organizations possess their own positive and negative transfer factors that may positively or negatively affect learning and transfer (Matheiu et al., 1992). Without an effective evaluation of training, organizations cannot know if the time and resources spent on training are effectively applied back to the job setting. Transfer systems are not the same across organizations and organizations should diagnosis issues within their training programs and target areas of key influence (Holton et. al, 2003). Probation officers engage in numerous hours of

mandated training each year to maintain their certification. There are various types of trainings required that need to be addressed to fully assess the transfer problem within the department. Given that there is no previous research evaluating the transfer system within the North Carolina probation department, this study serves as a foundation to diagnosing key areas of influence. Results of this study have implications for practice and future research.

Scores across the individual and work environment factors indicate a weak a transfer system within the probation department as the majority of scores hovered around the mean value of 3. This, in and of itself, does not indicate that no transfer is taking place however; it does identify areas for improvements.

Although scores within the individual and motivational factors were somewhat higher than those for the work environment factors they did not indicate a clearly strong transfer system in this area. Training and development coordinators should consider providing individual support and ensuring officers are aware of the importance of training and how it relates to their job performance. Providing information prior to a training that reinforces the need for the training may help officers feel more encouraged to apply the training back to their jobs. Providing relevant information and articles for officer's in advance may strengthen their belief for the need for continued mandated trainings. Strongly tied to the work environment factors, the organization should also consider providing valued rewards for completion and application of the trainings. Promoting the use of training in their everyday lives outside of the job may also help them feel motivated to apply the training on the job.

The scores within the work environment factors indicated transfer issues within the work environment. Probation training and development can benefit from evaluating those factors

within the work environment upon which they can make changes to increase the transfer system across the organization. For example, supervisor support was a predictor of transfer within the probation department, however, scores on the measure were moderate within the mean range indicating supervisors may not adequately support officers in applying training skills. Further indication is the score on the performance coaching or feedback measure. Feedback is a vital component of application and improvement of skills. Incorporating strategies or trainings for supervisors on how to effectively support and provide feedback on performance in key areas may help to increase transfer. Training facilitators should consider incorporating strategies for providing appropriate support and feedback during management training programs that officers received upon being promoted to Chief Probation Officer. The presence of supervisor support and performance coaching as predictors indicates the need for supervisors, training facilitators, and HRD personnel to actively engage in practices supportive of a positive work environment to further increase transfer among officers.

Additionally, low to moderate scores on the personal outcomes measures indicates that the organization is not properly linking training to performance rewards. If officers do not perceive there are consequences, both positive and negative, related to applying skills and knowledge from training, they are less motivated to transfer the skills. Officers regularly submit cases for review, but beyond the traditional follow-up to correct issues there are no consequences. Additionally, there are no known mandated observations for practical skills such as handcuffing, arresting, or escorting offenders, so typically officers receive no feedback and coaching in these areas until they have violated policy. Training and requiring supervisors to engage in constructive feedback consistently may facilitate further transfer among probation

officers. Additionally, there are also no known performance rewards for officers who perform their jobs better. Promotions to Chief Probation Officer are often rare due to limited vacancies and even then, qualified officers are often not promoted simply due the quantity of applicants for open positions. This is even more profound for Chief Probation Officers wanting to promote up to an administrative position. Although monetary rewards may not be an option within government agencies, the department should consider some type of recognition or reward programs for officers. In an effort to demonstrate agency support and provide valued outcomes, the organization could implement a reward or recognition system for officers. Probation divisions should consider implementing recognition systems such as “Officer of the Month” to reward officers who engage in appropriate transfer of training. Providing valued outcomes and recognition to probation officers could help promote transfer within the department.

Additionally, practitioners should note that different transfer factors were relevant across the different types of trainings. Only one work environment factor, resistance to change, was significant in predicting transfer for the practical CRDT training, which required hands- on skills application indicating the work environment may not be as important for applying practical skills. Training and development should focus on evaluating individual training programs to identify areas critical to increase transfer of training. What works to increase transfer for practical, hands-on skills may not be as effective for case management or soft skills transfer.

Recommendations for Future Research

This research adds to the body of literature on transfer of training in several ways. This study included demographic factors rarely included in transfer research and, although they were not significant factors within probation, this is an area for continued evaluation and inclusion in

future studies to evaluate the impact on the transfer system. As individual characteristics surfaced as the greatest predictors, it is recommended that future studies include additional demographic and individual factors as these may have mediating effects on the individual characteristics.

This research identified and evaluated the effect of individual and work environment factors on training transfer for probation officers in North Carolina. However, transfer is affected by a system of influences encompassing a variety of factors (Holton et al., 2000). A study including all factors known to impact the transfer system (trainee characteristics, training design, and work environment) would allow for a more thorough diagnosis of the transfer problem. Additionally, this study only assessed training transfer of one specific training program and training in general at one point in time. Future studies should consider including evaluations over time as differences in transfer occur over time. Longitudinal studies of transfer would allow organizations to diagnose long-term issues with transfer. Future studies within probation should consider evaluating other mandated trainings to identify factors specific those training programs.

Although the identification and evaluation of transfer factors is an important first step, it does not provide a comprehensive picture of the transfer problem within an organization. Future studies should also evaluate why these factors surface as significant among probation officers and what remedies would help to strengthen the transfer system. Future studies could use a mixed methods approach to identify the significant factors and gain an understanding of why officers feel these factors impact training transfer for them. A Q-sort methodology could also render important results and further identify factors and barriers to transfer within the organization. This approach allows participants to explain why they ranked factors a certain way.

A full qualitative approach in future studies with observed measurements could provide robust answers to these questions as well.

Summary

This research study utilized quantitative analysis to identify and evaluate proposed relationships between transfer and individual, motivational and work environment factors. Participants completed the Learning Transfer System Inventory, a diagnostic tool used to identify transfer factors along with additional demographic and perceived transfer questions. Analysis of the data indicated a weak transfer system within the probation department with most factor scores in the middle range. Further analysis indicated significant relationships among 11 of the 12 evaluated transfer factors. Performance self- efficacy, transfer- effort performance, motivation to transfer, supervisor support, resistance to change, and performance coaching were significant predictors of transfer among probation officers.

This study supports previous findings in the literature of the differences in transfer system factors across training programs and organizations. Probation officers exhibit distinctive qualities in the type of work they do and the environments in which they work. Probation officers are not confined to an office and perform a variety of tasks as well as undergo various mandated trainings to ensure they can effectively do their jobs. Identifying transfer factors specific to this field and environment is important to ensuring the safety of officers and the public as a failure to transfer skills in this environment could result in losses beyond the monetary investments for training and development.

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APPENDICES

Appendix A: LTSI Consent and User Agreement



Learning Transfer Systems Inventory User's Agreement

Permission is hereby granted to use the Learning Transfer Systems Inventory (LTSI), an organizational assessment instrument, owned by Elwood F. Holton III and Reid A. Bates. Permission is granted to the following people for the timeframe, and purposes specified below:

Permission granted to: <i>(Name, company, address, phone number, e-mail, etc.)</i>	Erica Ross North Carolina State University emross2@ncsu.edu (704)674-8828
Purpose	Dissertation Research
Time Period	
Other Conditions	

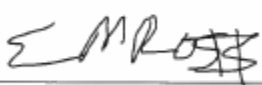

It is understood that, by agreeing to use the Learning Transfer Systems Inventory, you are accepting the following conditions:

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LTSI user (print name)	
Erica Ross	
Title	
NCSU Doctoral Student	
LTSI user signature	Date
	02/22/2016
Elwood F. Holton III or Reid A. Bates, LTSI authors	Date
	10/3/17

Appendix B: Survey Recruitment Email

To: {Study Participant Email}
From: Erica Ross
Subject: Invitation to provide training feedback

Study Title: An Examination of the Individual and Work Environment Factors Impacting Transfer of Training among North Carolina Probation Officers.

Dear Officer,

My name is Erica Ross. I formerly worked as a Probation Officer in Mecklenburg County for over 10 years. During that time, I obtained my General Instructor certification and conducted many trainings for the department. As a result, I became very interested in the effectiveness of training for probation officers. Currently, I am working on a doctoral degree at North Carolina State University and I am conducting a research study as part of the requirements for my degree in Adult and Community College Education. To satisfy this requirement, I would like to invite you to participate in a study about the factors impacting training for probation officers.

As a former probation officer in North Carolina, I understand your time is extremely limited and valuable; however, I feel this research could greatly contribute to the effectiveness of training you must undergo each year. If you decide to participate in this study, you will be asked to complete an online survey on the factors impacting your ability to transfer learned skills in training to the job setting. The survey should take approximately 20- 25 minutes to complete. To thank you for your time and participation in the study, all participants who choose to complete the survey will have the option to be entered in a random drawing to receive one of two \$25 Visa gift cards upon completion of the study. If you wish to enter the drawing, you will be directed to an external survey to provide information about how you would like to be notified and receive your gift card. The external survey is not linked to the Transfer survey and will not be traced back to your responses.

Participation in this study is voluntary and completely confidential. Study information will be kept in a secure location by the researcher with password protection. There are some risks associated with this study which includes vulnerability about disclosing work place conditions and loss of time. There are also psychological risks that participants may feel uncomfortable disclosing opinions about training or their work environment in fear of retaliation on the job, embarrassment about disclosing unfavorable, if any, information about supervisors, peers, and/or training or the risk that a participant's reputation at work may be tarnished. To minimize the risks associated with any questions answered, all information will be kept confidential and only shared in aggregate form. The Department of Public Safety will not receive information identifying the participants of the study. Only the researcher will have access to identifying information and all records will be kept in secure, password protected locations. The benefits of this study include your ability to help identify factors to improve training for all probation officers in North Carolina. No identifying information will be reported or published in any

studies or reports and the Department will not have access to actual participants. Participation in this study is not a requirement of your employment at DPS, and your participation or lack thereof, will not affect your job. Please also note that the “Department of Public Safety staff are not conducting this research project. They will not get a copy of your name or of your answers. The Department may receive a copy of the overall results at the end of the study but will not be able to identify you personally from the copy they receive.”

Taking part in the study is your decision. You do not have to be in this study if you do not want to participate. You do not have to answer any questions you are not comfortable answering. Should you choose to participate, you should take this survey outside of work and in a private location. Upon completion and submission of the survey, you should clear your browser history and cookies to further ensure your privacy.

I will be happy to answer any questions you have about the study. You may contact me at (704)951-5937 or emross2@ncsu.edu if you have any study related questions or problems. If you have any questions about your rights as a research participant, you may also contact Deb Paxton, Regulatory Compliance Administrator at dapaxton@ncsu.edu or by phone at 1-919-515-4514.

If you have read and understand the above information and would like to participate, please click on the link below or copy and paste the URL address into your web browser.

[Training Survey Link]

URL:

Thank you for your help!

Sincerely,

Erica Ross
Principal Investigator

Dr. James E. Bartlett II
Faculty Sponsor

Appendix C: Survey Follow-up Emails

To: {Study Participant Email}
From: Erica Ross
Subject: Reminder to provide training feedback

Study Title: An Examination of the Individual and Work Environment Factors Impacting Transfer of Training among North Carolina Probation Officers.

Dear Officer,

One week ago you received an e-mail message inviting you to provide training feedback and participate in an online survey about the factors impacting your ability to transfer learned skills in training to the job setting. If you have already filled out the survey, I thank you for your time and help!

If you have not had a chance to take the survey yet, I would appreciate your reading the message below and completing the survey. This survey should take no more than 20- 25 minutes to complete and all completed surveys will have the opportunity to be entered for a chance to win one of two \$25 Visa gift cards.

Please remember your participation is completely voluntary and confidential; and no individual information will be reported. Should you choose to participate; you should take this survey outside of work and in a private location. Upon completion and submission of the survey, you should clear your browser history and cookies to further ensure your privacy.

I will be happy to answer any questions you have about the study. You may contact me at (704)951-5937 or emross2@ncsu.edu if you have any study related questions or problems.

If you would like to participate, please click on the link below or copy and paste the URL address into your web browser.

[Training Survey Link]
URL:

Thank you for your help!

Sincerely,

Erica Ross
Principal Investigator

Dr. James E. Bartlett II
Faculty Sponsor

To: {Study Participant Email}
From: Erica Ross
Subject: Final Reminder to provide training feedback

Study Title: An Examination of the Individual and Work Environment Factors Impacting Transfer of Training among North Carolina Probation Officers.

Dear Officer,

Two weeks ago you received an e-mail message inviting you to provide training feedback and participate in an online survey about the factors impacting your ability to transfer learned skills in training to the job setting. I understand your time is valuable and the survey should take no more than 20- 25 minutes to complete. Your feedback is important to guiding and understanding training among probation officers in North Carolina.

If you have not completed the survey, please consider taking a few moments to provide your feedback. All completed surveys will have the opportunity to be entered for a chance to win one of two \$25 Visa gift cards.

Please remember your participation is completely voluntary and confidential; and no individual information will be reported. Should you choose to participate, you should take this survey outside of work and in a private location. Upon completion and submission of the survey, you should clear your browser history and cookies to further ensure your privacy.

I will be happy to answer any questions you have about the study. You may contact me at (704)951-5937 or emross2@ncsu.edu if you have any study related questions or problems.

If you would like to participate, please click on the link below or copy and paste the URL address into your web browser. The survey will close out and no longer be available after 7 days.

[Training Survey Link]
URL:

Thank you for your help!

Sincerely,

Erica Ross
Principal Investigator

Dr. James E. Bartlett II
Faculty Sponsor