This is to certify that the
dissertation entitled

EXAMINATION OF THE RELATIONSHIP BETWEEN SELF-DIRECTEDNESS AND OUTCOMES OF THE ONLINE COP TRAINING PROGRAM IN THE TURKISH NATIONAL POLICE CONTEXT

presented by

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has been accepted towards fulfillment
of the requirements for the

Ph.D. degree in Criminal Justice

Major Professor's Signature

June 14, 2010

Date

EXAMINATION OF THE RELATIONSHIP BETWEEN SELF-DIRECTEDNESS AND OUTCOMES OF THE ONLINE COP TRAINING PROGRAM IN THE TURKISH NATIONAL POLICE CONTEXT

By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Criminal Justice

2010

ABSTRACT

EXAMINATION OF THE RELATIONSHIP BETWEEN SELF-DIRECTEDNESS AND OUTCOMES OF THE ONLINE COP TRAINING PROGRAM IN THE TURKISH NATIONAL POLICE CONTEXT

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It is widely accepted that online learning is a self-directed learning environment and the participants need to have self-direction in learning. However, there is lack of empirical studies focusing on the relationship between online learning and self-directed learning and examining the relationship between self-directedness of learners and outcomes of online learning programs. Especially in the occupational training field or the police training field we cannot locate any significant study on these issues. Therefore, this study focused on an online community oriented policing (COP) training program conducted by the Turkish National police and aimed to examine the relationship between self-directedness of the participants (officers) and outcomes of this training program. Moreover, this study also sought to figure out what other factors predict officers' success in the online training program.

Based on Brockett and Hiemstra's (1991) Personal Responsibility Orientation (PRO) model indicating a relationship between self-directedness and outcomes of self-directed learning environments, and previous literature related to online learning and police training, during this study a logic model was developed to predict outcomes of the online COP training program. The outcomes were defined as perceived learning level of officers, their satisfaction with the training program, and change in their attitudes toward COP. Officers' attitudes toward COP was measured by six different constructs, and to

measure the changes in attitudes, a one-group pretest posttest research design was applied. Whereas self-directedness of the officers was measured by the 24-item Oddi Continuing Learning Inventory (OCLI) in the pretest, the other independent and control variables are measured in the posttest. All participants of the 4th term online COP Basic Training program (n=1406), conducted between May 25 and June 5, 2009, were selected as the sample of this study and questionnaires were delivered through a web-survey method administered before and after the training program. Whereas the response rate was 83% (1162) for the pretest, it was 72% (1006) for the posttest.

To examine the relationship between self-directedness of the officers and outcomes of the online training program and to figure out what other factors predict those outcomes, multivariate Ordinary Least Squares (OLS) regression analyses were conducted. Results showed that self-directedness of the officers was an important predictor of the outcomes of the online COP training program. According to the findings, the other important predictors of those outcomes were the assigned unit of the officers (COP related or not), gender, and internet accessibility.

On the other side, officers working in COP related units are trained only through the online training program in Turkey. Therefore, for the success of COP, it is vital to understand if online training is effective. This study also provides some information about effectiveness of the online COP training program. Finally, some practical implications of this study and some recommendations for future research are suggested.

Dedicated to my wife Ilknur, my daughter Zeynep, my son Mehmet, my mother and father…

ACKNOWLEDGEMENT

Throughout this dissertation process, many people have supported me, providing advice, encouragement, and wisdom. I want to express my appreciation and sincere gratitude to all of them. First of all, I wish to thank Dr. Edmund F. McGarrell, advisor and chair of my dissertation committee, for his guidance, continued support, and mentorship. I deeply appreciate his understanding, concern and effort in the completion of my dissertation despite his busy schedule. His leadership and thoughtful directions facilitated my job and helped me to complete the dissertation on time successfully. I would also like to show my gratitude to the other members of my dissertation committee, Dr. Jeremy M. Wilson, Dr. Charles Corley, and Dr. John M. Dirkx. They were very helpful and provided invaluable insight and encouragement throughout this process. It is an honor for me to have worked with each of them during this endeavor. Many thanks should also go all the staff and faculty members of the School of Criminal Justice at Michigan State University, whose classes have provided me with a large and helpful academic perspective and knowledge which served as a foundation for my research.

Most importantly, my sincere thanks go to my precious family who were with me during all parts of this challenging journey. This dissertation would not have been possible without my wife's (Ilknur HALICIOGLU) patience, positive encouragement, support, and devotions. I am also thankful to my daughter Zeynep Dilara and my son Mehmet Levent for their patience. Finally, I would like to acknowledge and thank all the members of the Turkish National Police (TNP) and my TNP colleagues at Michigan State University for their constant and generous support.

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CHAPTER 1

INTRODUCTION

1.1. STATEMENT OF THE PROBLEM AND THE PURPOSE OF THE STUDY

Major technological developments over the past 100 years have been continuing to affect all areas of human life (Fitzgerald, 2003). There is no doubt that the teaching and learning area is also one of those fields that are influenced by technological developments. In the teaching and learning field, a number of technologies have been used to facilitate and support learning activities. These are called education and training technologies (Bates, 2005; Galusha, 1997). In today's world, the internet is accepted as the most important and widely used education and training technology (Gray, 1999). Many educational sectors (such as universities, colleges, even high schools) offer online courses for their students in the world, especially in the United States. Additionally, for approximately two decades, some public and government organizations, including the police, have also started to use the internet to provide training for their personnel.

Police officials are aware that in a changing world, to be able to struggle with crime and criminals, and to be able to achieve policing efficiently, police organizations should modify and renew themselves constantly. They also know that a prerequisite of achieving this is having well-skilled, knowledgeable, and talented officers. There is no doubt that to have well-skilled, knowledgeable, and talented personnel, training and re-training is necessary. The Turkish National Police (TNP) is also aware of the importance of training. The Training Unit of General Directorate of the TNP, located in the capital of Turkey, is responsible for the training of all the officers around the country. This makes it difficult to provide continuous and efficient training for all officers and it is very

costly. To address this challenge, in 2006, the TNP invested significant resources in a new class called "smart class" that offered training programs for some special topics through online instruction offered all around the country.[1] In the current study, the central issue of concern is one of those online training programs, "Community Oriented Policing Basic Training Course."

The Turkish National Police has been interested in community oriented policing (COP) for less than a decade. Recently, the TNP implemented COP principles in all cities of Turkey. To achieve it, some city police departments established new units focusing on COP or they attempted to incorporate principles of COP into existing units. However, it is clear that a prerequisite of success for this kind of initiative is training of personnel who will be responsible for applying those principles (Adams, Rohe, & Arcury, 2002; Chappell, 2007; Cheurprakobkit, 2002; Dantzker et al., 1995; Goldstein, 1987; Haarr, 2001; Palmiotto, Birzer, & Unnithan, 2000; J. Zhao, Thurman, & Lovrich, 1995). To provide training, the General Directory of TNP organized a two-week, 60-hour program. However, because bringing all the personnel from cities to Ankara, which is capital of Turkey, will cost a lot of money, TNP decided to offer this training program through online distance learning technologies (that is, through smart class). The mission of this program is to build positive knowledge about COP, to teach the philosophy and aims of COP, to support the implementation of COP, and to inform officers about the importance of community relationships in solving the problems. That is, this program aims for police

[1] http://www.egm.gov.tr/egitim/index-7.html

officers to gain positive attitudes toward COP and to learn basic information about it and its implementation.

One of the problems is that, although TNP invested a lot of money in this smart class and although a number of courses have been conducted online, there is no scientific study or research examining online training in TNP. It is clear that in order to improve this kind of training program and increase its efficiency, it is vital to understand to what extent participants learn, if they are satisfied, and what affects their satisfaction and learning level. Moreover, understanding the effectiveness of online training is also important for the success of COP. Researchers claim that successful implementation of COP requires that "officers' attitudes, perceptions, and behaviors must be substantially changed before community policing can be put into practice" (Lurigio & Skogan, 1994, p. 315). Therefore, online training programs offering by TNP need to be examined scientifically in order to learn their effectiveness, their deficiencies, factors affecting their outcomes, etc.

On the other hand, the main problem necessitating this study is related to the relationship between online learning and self-directed learning. Literature shows that online learning is considered as a learning method in which learners organize their learning, control their learning pace, time, place, and assess their learning themselves; that is, online learning is considered as a self-directed learning environment (Killion, 2000; King, 1998; Murphy, Levant, Hall, & Glueckauf, 2007; Sitzmann, Kraiger, Stewart, & Wisher, 2006; Thornbory, 2003; Trombley & Lee, 2002). In these kinds of learning environments, learners are also expected to be self-directed. However, although online learning is accepted as a self-directed learning environment and its participants are

supposed to be self-directed in learning, there is lack of study and research focusing on self-directed learning and online learning together and examining the relationship between self-direction and outcomes of online learning. Especially in the occupational training field or police training field, we cannot locate any significant study focusing on these issues.

Consequently, the primary purpose of this study is to examine the relationship between outcomes of online COP training and self-directedness of officers in Turkish National police, and to understand what other factors predict those outcomes. In addition, through examining the Community Oriented Policing Basic Training Course conducted by Turkish National Police, this study aim to figure out to what extent the online training influences officers' learning, their satisfaction with training, and the change in their attitudes toward COP.

1.2. IMPORTANCE OF THE STUDY

As mentioned in the statement of the problem, there is no study conducted so far to examine online training programs in Turkish National Police. This study is the first scientific study focusing on online police training in the Turkish context. Although the main aim of this study is not evaluation of the online training programs, it gives an idea about the effectiveness of the online training programs (especially about the online COP training program). This study also helps us to understand the factors affecting the success of officers or outcomes of the training (e.g. learning, satisfaction, and, for this study, change in attitudes toward COP) in an online learning environment. That is, once the factors affecting the outcomes of online training are found empirically, researchers,

instructors, and policy makers should be able to find feasible instructional strategies and to produce policies in order to deal with these aspects (Chou & Chen, 2008).

There are only a few studies focusing on self-directed learning and online learning together (e.g., Corbeil, 2003; Doherty, 2000; Ibrahim & Silong, 2000; Johnson, 2005; Pachnowski & Jurczyk, 2000), and all of these studies were conducted in university or college settings. There appears to be no studies focusing on self-directed learning and online learning together in occupational training settings, including the police. This study can be accepted as one of these few studies focusing on this area. The other problem with previous research is that most studies were conducted with small sample sizes of people, such as 39 for Pachnowski & Jurczyk (2000), 98 for Corbeil (2003), and 85 for Johnson (2005). Therefore, this study is the first to use a large sample size in this kind of research.

In terms of training of community oriented policing, although importance of COP training in changing officers behaviors, skills, and attitudes toward COP is accepted broadly, there are few studies focusing directly on such training (such as Cheurprakobkit, 2002; Haarr, 2001; Rosenbaum, Yeh, & Wilkinson, 1994). This research is one of the few studies examining COP in-service training programs and their effects on attitudes of officers toward community policing, and it is the first study focusing on an online COP in-service training program.

1.3. THEORETICAL FRAMEWORK OF THE STUDY

1.3.1. Predictors of Outcomes of Online Training:

As mentioned, the main purpose of this study is to understand if there is any relationship between self-directedness of officers and outcomes of online training and to identify what predicts these outcomes in an online training program. However, when we

look at the online distance learning field, we encounter a gap in terms of theory to understand this field comprehensively (Imel, 2003). The literature shows that online learning offers a self-directed learning environment (Chou & Chen, 2008; Ibrahim & Silong, 2000; Killion, 2000; King, 1998; Murphy et al., 2007; Sitzmann et al., 2006; Thornbory, 2003; Trombley & Lee, 2002). Therefore, in terms of theory predicting the outcomes or success of the online learning, this study focuses on self-directedness of adults in self-directed learning environments. There should be a link between self-directedness of the learner and their success in the online learning environment. This belief is based on adult learning theories (especially, andragogy), self-directed learning theory and theoretical models in SDL field (especially PRO model), and literature related to both self-directed learning and online learning.

Andragogy theory, also called adult learning theory, assumes that "as a person matures, his or her self-concept moves from that of a dependent personality toward one of a self-directing human being" (Merriam, Caffarella, & Baumgartner, 2007, p. 84). That is, adults tend to be self-directed because of their self-concept for their own lives and own decisions (Knowles, 1990). According to Knowles, the pioneer of the andragogy theory, SDL is a process in which "individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, p. 18). Either in this most common definition of SDL, or in other definitions of SDL or theoretical approaches related to SDL existing in the literature (such as, Brockett & Hiemstra, 1991; Candy, 1991; Fisher, King, & Tague, 2001; Garrison, 1997; Oddi, 1986; Song & Hill, 2007;

Tough, 1971), we encounter two important dimensions: self-directed learning as a process or learning method, and self-direction as a personal attribute of learners.[2]

According to the first dimension, SDL is a process in which learners can control their own learning (Knowles, 1975). Based on its features, it can be said that online learning is one of the main, most powerful, and important SDL tools and processes (Gray, 1999; Ibrahim & Silong, 2000; McVay, 2000; O'Shea, 2003; Song & Hill, 2007). The other dimension mentioned by theoretical approaches and literature related to self-directed learning is self-direction as a personal attribute of learners. The main assumption related to this dimension is that "learning in adulthood means becoming more self-directed and autonomous" (Merriam et al., 2007).

One of the theoretical models combining these two dimensions is Brockett & Hiemstra's (1991) Personal Responsibility Orientation (PRO) model. The PRO model, comprised of five concepts, presents a theoretical framework to understand self-direction in adult learning. The first concept, personal responsibility, indicates that people assume ownership of their actions and thoughts. "Within the context of learning, it is the ability and/or willingness of individuals to take control of their own learning that determines their potential for self-direction" (Brockett & Hiemstra, 1991, p. 26). The second concept, self-directed learning, refers to an instructional method or learning process in which learning activities are planned, implemented, and learning is evaluated (ibid.). This concept is related to factors which are *external* to an individual learner. The third concept, self-direction, refers to the *internal* personal attributes and characteristics of adult learners. The fourth concept, self-direction in learning, refers to the vital link

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[2] Recent theoretical approaches have also added learning context as the third dimension of self-directed learning (Brockett & Hiemstra, 1991; Candy, 1991; Song & Hill, 2007).

between self-directed learning and self-direction. In addition, as the fifth concept, Brockett & Hiemstra (1991) also talk about possible effect of the social context in which learning takes place, such as universities, occupational training settings, museums, libraries, and web environments.

The PRO model views both internal and external factors of self-direction as a continuum and proposes that "...optimal conditions for learning result when there is a balance, or congruence, between the learner's level of self-direction and the extent to which opportunity for self-directed learning is possible in a given situation" (Brockett & Hiemstra, 1991, p. 30). According to this model the balance between internal characteristics of the learner and external characteristics of the learning-teaching transaction should be in harmony; otherwise, difficulties and frustration arise (Brockett & Hiemstra, 1991). That is, the PRO model indicates that there is a link between effective learning or success and being self-directed in self-directed learning contexts. Some empirical studies also support this claim (e.g., Garver, 1996; Haggerty, 2000; Harriman, 1990; Morris, 1995; Stewart, 2007). Because online learning is seen as a SDL process, this claim can be accepted for online learning environment. That is, it can be said that there is a relationship between adults' success or learning and their self-directedness in online learning environments.

However, it may be reductionist to say that we can predict outcomes of online learning just through the self-directedness level of participants. Literature also indicates that there may be some other concepts and variables related to effective learning and success in SDL and online learning environments. One of these is context referring to a variety of settings in which learning occur and including both institutional and the global

contexts which participants experience during the learning process (Brockett & Hiemstra, 1991). Whereas institutional context refers to settings from formal education and training institutes to informal institutes, the global context refers to culture in which learning takes place (Brockett & Hiemstra, 1991).[3] Song & Hill (2007) reduce explanation of the context to the learning setting.[4] However, in occupational learning settings in which non-traditional adult learners are trained, we may also think about work conditions (e.g., work load, shifts, supervisory or departmental support, etc.) (Bartlett, 1999), and social structure, such as family structure (e.g. marital status, children, etc.) or socioeconomic status (Bartlett, 1999; O'Shea, 2003) as learning context that the learners experience. Moreover, accessibility to internet or lack of computer for internet access in the learning environment can also be assessed within the concept of context.

Additional factors that may have effects on outcomes of an online learning are personal and demographic attributes of the learners. Personal attributes include computer skills, previous experiences in online learning, previous experience in the topic, and educational level. In occupational learning settings, they also include rank and experience in job (service year). In terms of demographic characteristics literature generally focuses on age, sex, ethnicity or race, and their relationship with success in online learning environments (Bartlett, 1999; Conti, 2009; Durr, Guglielmino, & Guglielmino, 1996; Galusha, 1997; Gray, 1999; Ibrahim & Silong, 2000; Kolody, 2003; O'Shea, 2003; Pachnowski & Jurczyk, 2000; Song & Hill, 2007).

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[3] Whereas the examples for the formal learning settings are colleges, universities, occupational training settings, examples of the informal institutes are museums, libraries, web environment, etc. (Brockett & Hiemstra, 1991).

[4] According to Song & Hill (2007), the context is comprised of design (resources, structure of learning setting, and nature of tasks) and support (instructor feedback and peer collaboration).

To sum up, it seems that one of the most important predictors of outcomes of online learning or online training is the degree of participants' self-directedness or self-direction in learning. The theoretical framework used in this study also depends on the theoretical approaches and literature related to SDL mentioned above. There are eight theoretical assumptions guiding this dissertation study.

1- Adults are self-directed in learning environment (Knowles, 1990).

2- Self-directedness (or self-direction) is the personal characteristic of the learner (Brockett & Hiemstra, 1991; Candy, 1991; L. M. Guglielmino, 1977; Oddi, 1986).

3- Self-directed learning is a process (Knowles, 1975).

4- Although adults are self-directed, their level of self-directedness varies. That is, some people might be more or less self-directed than others (Brockett & Hiemstra, 1991; Grow, 1991; L. M. Guglielmino, 1977; Oddi, 1986).

5- "...optimal conditions for learning result when there is a balance, or congruence, between the learner's level of self-direction and the extent to which opportunity for self-directed learning is possible in a given situation" (Brockett & Hiemstra, 1991, p. 30).

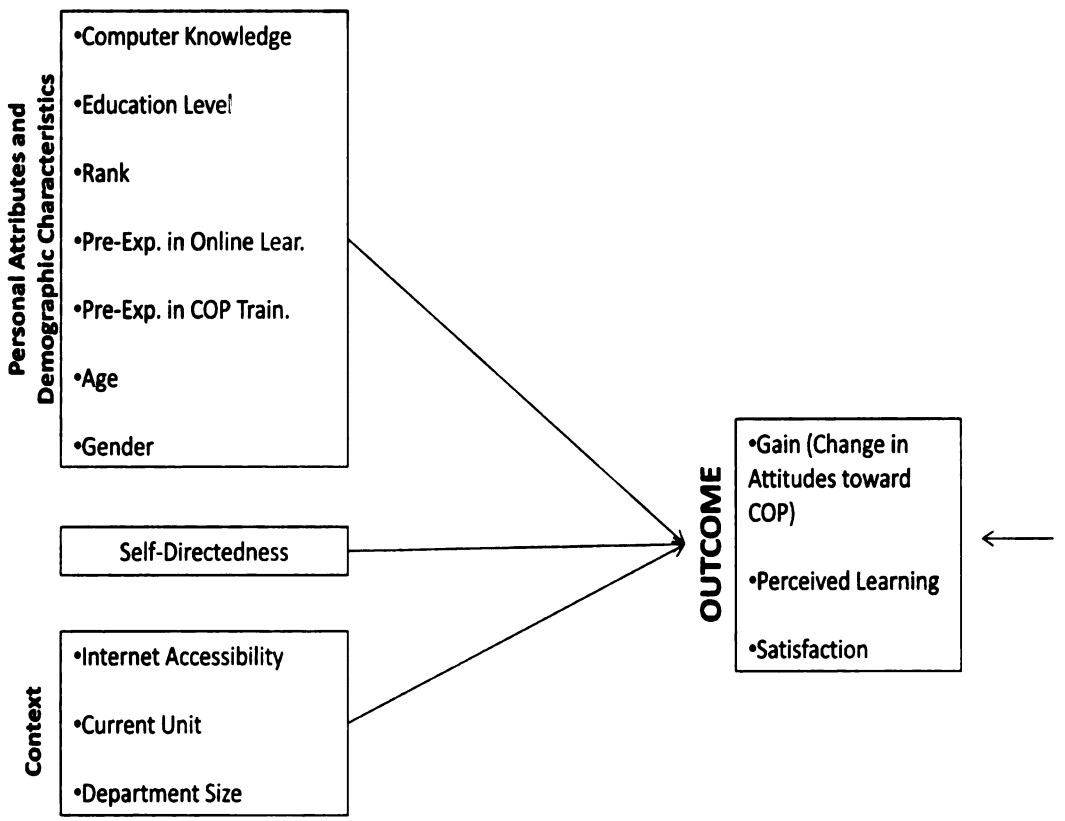
6- Online learning is a SDL process (Gray, 1999; McVay, 2000; Song & Hill, 2007).

7- Because online learning is a SDL, there is a link between successful learning and self-directedness of a learner in an online learning environment.

8- Success in online learning or outcomes of an online learning can also be determined by other personal attributes and demographic characteristics of the learner and the context in which learning takes place.

Finally, there is a logic model developed to predict the outcomes of the online training for this study. This logic model is based on the PRO model, as well as previous literature related to online learning and police training. In this model, there are three types of variable that predict the outcomes of online police training: self-directedness level, variables related to personal attributes and demographic characteristics of the officers and variables related to the context. Figure 1 demonstrates the logic model of this study.

Figure 1: The Logic Model for Online COP Basic Training Program



1.3.2. Online Training and Officers' Attitudes toward COP:

As emphasized, the main purpose of this study is to examine the relationship between self-directedness of officers and outcomes of the online COP training program (learning, satisfaction, and change in attitudes of officers toward COP) and to understand the predictors of these outcomes in an online training program. However, this study also provides opportunity to understand if there is any change in attitudes of officers toward COP at the end of the online training program.

As Lurigio and Skogan (1994, p. 315) mention, like other police innovations, "the success of community policing depends on the police officers who are responsible for implementing the programs" (see also Lord & Friday, 2008, p. 220). These scholars also claim that in order for successful implementation of community policing, "*officers'* attitudes, perceptions, and behaviors must be substantially changed before community policing can be put into practice" (p. 315).

Adams and his colleagues (2002, p. 404) suggest that "two organizational features affect attitudes about COP: proper training in community policing...and a participatory management style". According to them, training and feedback promote a positive view of COP. For example, the studies of Skogan and Hartnett (1997) and Skogan, Hartnett, DuBois et al. (1999) show that "street officers in Chicago who feel well trained in COP hold much more positive attitudes about their jobs than officers who do not feel well trained; they are also more optimistic about the impact of COP on crime if they feel a part of the decision-making process" (as cited in Adams et al., 2002, p. 404). That is, it can be said that "officers who felt well trained in COP and later problem solving were more

positive about COP in general and the impact that it had on crime" (Lord & Friday, 2008, p. 222).

Similar issues are also discussed by Rosenbaum & Wilkinson (2004). These authors focus on theories of change assuming that "the engineered changes in police attitudes, perceptions, and behaviors are important mechanisms through which police organizations will be able to operate more effectively, efficiently, and equitably." (p. 80). To support these changes, police organizations need some initiatives for training, socializing, rewarding, and deploying officers and they expect these initiatives to make sizable and sustained differences in officers' attitudes and behaviors related to COP (Rosenbaum & Wilkinson, 2004). These scholars also claim that "organizational reform [such as the restructuring of the departments and tasks, and community policing training], if successful, should eventually produce changes in officers' perceptions of their relationship with the community, their definition of police and community roles, and their attitudes about community policing" (parenthesis was added, Rosenbaum & Wilkinson, 2004, p. 94).

If this claim is correct, it can be expected that training should produce changes in officers' perceptions of their relationship with the community, their definition of police and community roles, and their attitude about community policing. This expectation is also supported by Haarr (2001) who emphasizes that if the "training program was effective, one would expect police *officers* to have more positive attitudes toward community policing, problem-solving policing, *and* police-public relations" when they finish the training program compared to when they enter the training program (italics

were added, p. 412).[5] Thus, this study also helps us to figure out if there was any gain in terms of change in officer's attitudes with respect to COP at the end of the online COP training program.

1.4. ORGANIZATION OF THE STUDY

This dissertation is comprised of six chapters. In the first chapter, an introduction to the research, statement of the problem, purpose of the study and importance of the study are presented. Moreover, an initial discussion of the theoretical framework of this study can also be found in this chapter.

The second chapter is comprised of a literature review. This chapter includes five sections. The first section reviews Community Oriented Policing (COP), especially the training side of COP. The second section focuses on training, particularly police training. The next section reviews training technologies; in particular, online distance learning. Because the police training involves adult training, the fourth area reviewed is adult learning. In addition to these four main fields, the fifth and last section of this chapter is a literature review of self-directed learning.

The third chapter of this study focuses on the context of this research, the Turkish National Police (TNP). This chapter presents a history of the TNP, its structure, the training of officers, use of training technologies and online distance training, community oriented policing, and the Online Community Policing Basic Training Program.

In the fourth chapter, the research question and hypotheses of this research are presented. Then the research design, sampling design, instrumentation, and data

[5] Although this expectation of Haarr was police academy training, I re-modified it for in-service training.

collection process are examined. This chapter also presents the conceptualization and operationalization of the variables.

The fifth chapter focuses on analyses of this study. Descriptive statistics, bivariate analyses, and multivariate OLS regression analyses are provided in this chapter. In addition, major research findings are reported.

In the final chapter, the results of the study are discussed based on the theoretical framework of the study and previous literature and research. Moreover, limitations of the study, implications of the results, and recommendations for future research are presented.

CHAPTER 2

LITERATURE REVIEW

2.1. COMMUNITY ORIENTED POLICING

There have been long discussions indicating that in order to control crime, the value of classic policing methods in controlling crime are very limited and that the police function is broader than just crime control (Goldstein, 1987). Others have criticized the police for having lost their connection to the community (Trojanowicz, 1971) and some have advocated that the police adopt a problem solving orientation (Eck, 2006; Goldstein, 1979). As a result of this and similar discussions, community oriented policing or community policing (COP) has emerged as the most important policing innovation in the past quarter century (Skogan & Roth, 2004).

The origins of COP can be traced to the beginning of 1970s when scholars and practitioners asked what the proper role of police in a democratic society was (J. Zhao, Lovrich, & Thurman, 1999). In the early 1980s, the idea of community policing emerged as the dominant direction in policing (Haberfeld, Walancik, & Uydess, 2002), as successful programs (such as foot patrol in Flint, Michigan; the fear of crime reduction efforts in Houston, Texas; and problem-oriented policing in Newport News, Virginia) served as catalysts for change in police practice (J. Zhao et al., 1999). By the 1990s, this new perspective had become the dominant strategy of policing (Rosenberg, Sigler, & Lewis, 2008). In the 1990s, policing encountered a number of exciting and complex changes and community policing was the most important change driving other changes

(Birzer & Nolan, 2002). COP in the U.S. was supported by the Clinton administration,[6] many police departments started to apply COP practices, and a number of scientific studies and researches were conducted (J. Zhao et al., 1999). Prominent police scholars such as Eck & Rosenbaum (2000) stated that COP has "become the new orthodoxy for cops" (as cited in Wilson, 2006, p. 7). According to the U.S. Department of Justice, by 1999 some form of COP was practiced by approximately 70 percent of all local agencies (as cited in Meesig, 2006). In terms of 2000s, especially after the 9/11 terrorist attacks against World Trade Center and Pentagon in 2001, the very foundations of the American policing industry was shaken and it appeared that the policing interests were directed to Homeland Security more than COP (Maguire & Wells, 2009). According to some, in this term "community policing had lost relevance, but for others the more toward community policing had become even more important" (Maguire & Wells, 2009, p. 173). It should be indicated that since beginning of the 2000s, community policing principles have became more popular in other countries (such as Turkey).

2.1.1. Definition of Community Policing

Although it is a very popular policing innovation, there has been a lot of debate on the definition of COP (Chappell, 2009; Dantzker et al., 1995; Rosenberg et al., 2008). Whereas some base their definition on a single police tactic or program, others see COP as "a collection of strategies that share a common philosophy or set of principles about the desired role of police in society" (Rosenbaum & Lurigio, 1994, p. 302). Most researchers, practitioners, and agencies tend to include similar components such as

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[6] In 1994, Congress passed the Crime Control and Law Enforcement Act and proceeded to spend roughly $9 billion dollars over the next six years to support local law enforcement agencies (Rosenbaum & Wilkinson, 2004, p. 79)

community involvement, problem solving, and decentralization (Adams et al., 2002; Chappell, 2009; Skogan, 2006). Some others include quality of life, reduction in fear of crime, and crime prevention (Skogan, 2006; Skogan & Roth, 2004). According to Rosenbaum and Lurigio (1994, p. 302), "academics and practitioners alike will continue to struggle with the definition of community policing."

Basically, COP can be defined as a fundamental metamorphosis from traditional reactive policing to proactive policing including a more comprehensive philosophy of crime prevention (Meesig, 2006). In order to identify and solve community problems, COP requires the development of partnerships between police and citizens and the coproduction of order by them (McGarrell, Socorro, & Gutierrez, 2003). The most common used definition of COP is this:

> Community policing is a new philosophy of policing, based on the concept that police officers and private citizens working together in creative ways can help solve contemporary community problems related to crime, fear of crime, social and physical disorder, and neighborhood decay. The philosophy is predicted on the belief that achieving these goals requires that police departments develop new relationships with law-abiding people in the community, allowing them a greater voice in setting local police priorities and involving them in efforts to improve the overall quality of life in their neighborhoods. It shifts the focus of police work from handling random calls to solving community problems (Trojanowicz & Bucqueroux, 1990, p. 5).

There is a common agreement in the literature indicating that COP is a philosophy (Chappell, 2009; Cheurprakobkit, 2002; Goldstein, 1987; Rosenberg et al., 2008; Trojanowicz & Bucqueroux, 1990; D. Weisburd, Shalev, & Amir, 2002) rather than a temporary program. Instead, COP refers to a philosophical position identifying the role and functions of the police (D. Weisburd et al., 2002) whereby the values and beliefs underlying COP are absorbed by the police departments and their mangers and officers efficiently, and the requirements of these values and beliefs are applied permanently in a specific neighborhood (Goldstein, 1987).

In an early approach to COP, Goldstein (1987) mentions some common characteristics of it. First, police are easily accessible, visible, and give importance to relationships with citizens. Second, police aim to prevent crime through educating citizens on avoiding victimization and on reporting suspicious situations. Third, community organizations are seen as important; it is believed that these organizations increase cohesion in the community and thereby reduce fear of crime and support police to deal with problems of the community. Fourth, police are expected to identify and seek solutions for recurring problems. Fifth, the police officers are given more autonomy to work with the community and solve the problems. Sixth, there is continuity in COP; that is, officers are assigned to an area permanently and they spent more time for community outreach.

Similarly, Skogan & Roth (2004) focus on decentralization, community engagement, and problem solving as the general characteristics of COP. Decentralization provides opportunity to officers to work in specific neighborhoods. This is intended to support relationships between officers and residents of the neighborhood, to promote

COP projects, and to facilitate localized solutions for problems of the community. Community engagement means involving citizens in public safety activities. "Community policing encourages agencies to develop partnership with community groups to facilitate 'listening' to the community and constructive information sharing" (ibid., 2004, p. xxiv). The third characteristic of COP is problem solving. This requires identification and prioritization of neighborhood problems by both police and public, and involves establishing relationships with other public and private sectors.

2.1.2. COP and Organizational Changes

COP requires fundamental and strategic changes in all aspects of policing (Palmiotto et al., 2000). It calls for change in the basic role of police officers including daily routine, relationships, skills and abilities, recruitment, training, and retention (Haarr, 2001). Among the most important changes are the empowerment of community partnerships and problem solving activities (Cheurprakobkit, 2002). In addition COP also requires organizational changes. Chappell (2009, pp. 7-8) indicates that COP requires "different structures (decentralization, flattening of the layers of hierarchy, less specialization, teamwork, and hiring civilian employees), changes in management (including coaching, mentoring, empowerment of line officers, and selective discipline), and the collection and utilization of more information (including the use of community surveys, performance appraisals, program evaluations, information systems, crime analysis, and geographic information systems)." Because most of these changes are beyond traditional roles and perspectives of officers, there are frequently battles for the hearts and minds of police officers during the process of shifting from traditional policing

to COP (Lurigio & Skogan, 1994). In this situation, the attitudes of officers toward COP are important.

2.1.3. Attitudes of Officers toward COP

As Lurigio & Skogan (1994, p. 315) state, the "success of community policing depends on the police officers who are responsible for implementing the programs. In essence, their attitudes, perceptions, and behaviors must be substantially changed before community policing can be put into practice." Officers' attitudes toward COP refer to the view of COP, its perceived success, their understanding it, and their acceptance (Chappell, 2009; Lurigio & Skogan, 1994). Some research also indicates that there is a link between officer attitudes toward community policing and their behaviors related to this phenomena (Lurigio & Skogan, 1994; Mastrofski, Worden, & Snipes, 1995). Some others emphasize that one of the important obstacles of community policing is the lack of understanding and absorbing of COP by the street level officers (as cited in J. Zhao et al., 1995). Therefore, Lurigio and Skogan (1994) suggest that attitudes of officers toward COP should be examined before implementing COP programs, and these programs should be presented in a way in which police officers will likely accept it. Finally, "organizational change in general must have personnel investment" (Lord & Friday, 2008, p. 220), and departments must take in to account personnel factors and their attitudes toward COP when they want to apply COP successfully.

2.1.4. Training and COP

Some scholars indicate that behavioral changes of officers depend on support from organizational changes, such as new training programs consistent with COP (Goldstein, 1987; Palmiotto et al., 2000; Rosenbaum & Wilkinson, 2004). It is widely

believed that officers who are highly educated and highly trained can meet the most important requirements of contemporary police innovations and changes (J. Zhao et al., 1995). Discussing the importance of training and education in police organizations, some emphasizes that "highly educated officers and better trained staff do not *per se* guarantee better cooperation and communication, but training and education is a *sine qua non* factor on the way to improving the quality of police work" (as cited in Feltes, 2002, p. 55). Moreover, some studies show that comparing those officers who are not trained well in COP, officers who are trained well have more positive attitudes toward COP (Adams et al., 2002).

Because COP requires movement from reactive policing to proactive and coactive policing, and COP officers are expected to use their discretion effectively, it is believed that the use of discretion and decision making will heavily depend on training (Gutierrez & Thurman, 2003). COP also requires police officers to have some skills and abilities such as the ability to communicate with citizens, giving importance to the ideas of the public, listening to their concerns, being able to establish partnership with citizens and other public private organizations, and to be able to coordinate various crime prevention programs. All of these skills require training, and training for COP will be much more complex than training for traditional policing (Chappell, 2007). According to Zhao et al. (1999), community policing training programs should move police officers' values and attitudes away from traditional bureaucratic model toward the new model of COP.

Finally, it is seen that training is very important in effective implementation of COP, and "in the absence of a comprehensive training program, community policing officers will invariably revert to traditional policing approaches and old work habits when

they are performing their jobs" (Skogan et al., 1994; as cited in Dantzker et al., 1995, p. 46).[7]

One of the theoretical approaches guiding COP training is the "local theory of change" offered by Rosenbaum & Wilkinson (2004, p. 81; see also Rosenbaum et al., 1994). This theory focusing on organizational changes required by community policing and naturally emerging during the community policing process assumes that "lasting changes in officers' attitudes and behaviors are more likely in organizational environments that encourage and support such changes" (Rosenbaum & Wilkinson, 2004, p. 81). This support can be possible through a participatory management style introducing a set of changes including new training programs (Rosenbaum et al., 1994). Finally, the proposition of this theory is that "changes in organizational structure (e.g., creation of special units), management style, and training programs, beyond other factors, will enlarge and enrich the line officers' job, as well as create a supportive work environment. This new environment will, in turn, yield respect to community policing and problem solving" (Rosenbaum & Wilkinson, p. 82). As it is seen, this theoretical approach strongly claims that there is a relationship between community policing training and change in officers' attitudes toward community policing.

In their longitudinal study, based on this theory, Rosenbaum & Wilkinson (2004) tested the hypothesis indicating that "organizational changes and training programs can enrich and enlarge the officers' job, improve job satisfaction, strengthen problem-solving skills, and instill a variety of positive attitudes and behaviors relevant to establishing a closer working relationship with the community" (ibid., p. 98). Although their results

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[7] Skogan, W.G., Hartnett, S.M., DubBois J. et al., (1994). Interim report: Community policing in Chicago, Year One. Evanston:Center for Urban Affairs and Policy Research, Northwestern University

showed that there were some noteworthy and stable changes among officers, some of the important changes were lost with the following passage of time (Rosenbaum & Wilkinson, 2004).

There are some discussions focusing on training and the implementation of COP. Some argue that there are training related obstacles to COP. One of these is the curriculum of police academies. Although Bureau of Justice Statistics (2004) show that 79 percent of police academies train new officers in community policing, it is well known that their curricula generally includes only one course depending on the philosophy of community policing (as cited in Chappell, 2007). In addition to the limits of academy training, Hawkins & Weisheit's (2003, p. 22) study shows that most frequently cited obstacles to COP training by the small and rural police agencies are "freeing up officers' time (76%), cost of training (70%), relevance of training content to rural and small-town areas (48%),and distance to training (47%)." It is clear that time, distance, and cost are obstacles not only for small and rural area police departments' training needs, but also for large police departments.

Others have argued that COP training should be designed, offered, and evaluated differently (Birzer & Tannehill, 2001; Chappell, 2007; Cheurprakobkit, 2002; Dantzker et al., 1995). They say that COP training should be different from traditional militaristic methods which tend to be rigid and try to teach procedures, law, and policies strictly (Birzer & Tannehill, 2001; Cheurprakobkit, 2002). Not only line level officers but also managers and supervisors should participate in training programs. This training should focus on specific community needs, innovative and proactive thinking given that COP requires these skills (Cheurprakobkit, 2002). Since COP requires the officers to have

multi-functions and to be more citizen-oriented, and since police officers are naturally adult learner, COP training should depend on learner-centered adult education approaches instead of teacher-centered pedagogy (Birzer & Tannehill, 2001). Finally, "if the intent of community policing training is to produce fundamental changes in policing, then training materials and approaches must explicitly reflect and support those changes" (Dantzker et al., 1995, p. 50).

2.1.5. Research on Training and COP

In terms of research, it can be said that there are only a few studies directly focused on the relationship between training and its effect on COP process, especially on change in behaviors or attitudes of officers toward COP (Cheurprakobkit, 2002; Dantzker et al., 1995; Haarr, 2001; Rosenbaum et al., 1994; J. Zhao et al., 1999; J. Zhao et al., 1995). Rosenbaum and associates (1994) examined changes in police officers' behaviors and perceptions over a two year period of community policing activities in which they were exposed to new COP training programs, organizational changes, and problem solving related activities in Joliet, Illinois. They found positive changes in knowledge and attitudes of officers toward COP though they found few changes in officers' job satisfaction (Rosenbaum et al., 1994). In 1995, Dantzker and his colleagues evaluated the training for Chicago's Alternative Policing Strategy (CAPS) in order to understand how police officers were prepared for community policing. The primary focus was on training and methodologies used in the training division of Chicago police department. They observed two types of training: orientation and skills building. Their results showed that trainers were generally enthusiastic and knowledgeable. They also made some

recommendations (I mentioned above) on how to apply training for COP (Dantzker et al., 1995).

In another study conducted in 1995, Zhao, Thurman & Lovrich examined attitudes of police departments across the country toward community policing training and education and they also examined obstacles to community policing implementation. In terms of training, their results revealed that training is seen as a facilitator for implementation of community policing by the departments. They also found that "the higher a police agency's interest in training and education, the greater the number of COP programs they implement" (J. Zhao et al., 1995, p. 20). These authors strongly emphasized that for successful implementation of community oriented policing innovations, training of officers was vital. In a similar study in 1999, these authors showed that interest in community policing activities significantly increased and therefore, departments' needs for community policing training had also intensified.

One of the few studies that examined the direct effect of training on attitudes of police officers toward community oriented policing is Haarr (2001). Haarr examined the effect of basic training, field training, and work environment on police recruits' behaviors and attitudes related to community oriented policing, problems solving policing, and relationships between police and the public. She used *panel design* to survey 446 recruits from 14 basic-training academy classes at the Phoenix Regional Police Training Academy. In terms of theory, she followed Mastrofski and Ritti (1996) who found that "even intense *and* high quality training may lose its force... once the officers are exposed to the powerful effects of everyday work and the occupational culture of their more experienced colleagues" (Mastrofski & Ritti, 1996, p. 296). Similarly, Haarr (2001)

found that although the academy had a positive effect on police recruits' attitudes related to COP and problem solving, this positive effect disappeared after they were assigned their police agencies in which they are exposed to the organizational culture and work environment.

Finally, Cheurprakobkit (2002) also examined whether officers' acceptance of community policing implementation was affected by community policing training. Their results showed that officers' attitudes toward accepting community policing programs were affected by training; "compared to those who did not receive training, officers who attended the training strongly and significantly agree to adopt and practice COP" (Cheurprakobkit, 2002, p. 720).

2.2. TRAINING AND POLICE TRAINING

2.2.1. What is training?

Training is "a planned and systematic effort to modify or develop knowledge/ skill/ attitude through learning experience, to achieve effective performance in an activity or range of activities" (Buckley & Caple, 2004, p. 5). This definition is general and encompasses all kind of training activities. However, the focus in this study is training related to the job or work environment. Through this perspective, training can be defined as "any formal and informal activity that contributes to an improvement in an employee's knowledge, skill, and attitude levels" (Lucas, 1994, p. 3). That is, in order for them to achieve or perform tasks related to their work adequately, training enables employees to acquire abilities (Buckley & Caple, 2004).

Lucas (1994) indicates that understanding the meaning of training is not easy; therefore, when we define it, we should look at what the training is not. According to him, training is not *a remedy for all performance problems*; that is, even the best training method may not change some employees who are unwilling or incapable to do a task or job. Training is not *a means for an employee to perfect task performance*; rather employees perfect their techniques on the job through experience knowledge or skills. Training is not *a way of compensating for poor supervision.* Last, training is not *easy*; that is, training programs should be viewed comprehensively and well-planned (Lucas, 1994).

One of the critical questions that can help to understand the meaning of training is "is training same with education?" Sometimes education and training are used interchangeably. However, this situation causes concept confusion. That is, it should be known that education and training are two different concepts (Buckley & Caple, 2004; Hackett, 1997; Lucas, 1994; McKenzie, 2002). Education is "a process and a series of activities which aim at enabling an individual to assimilate and develop knowledge, skills, values and understanding that are not simply related to a narrow field of activity, but allow a broad range of problems to be defined, analyzed and solved" (Buckley & Caple, 2004, p. 6). Basically, the aim in education is to open minds of individuals, and the aim in training is to support specific tasks done by individuals (Hackett, 1997). Training is related to skills and attitudes; education is related to broad knowledge and understanding (McKenzie, 2002). In the training process, we provide information and rules on procedures; however, in education process, we contextualize knowledge to provide the learners with a broad understanding of the "why(s)" (McKenzie, 2002).

Finally, training is more job or work oriented; education is more individual-oriented (Buckley & Caple, 2004).

2.2.2. Importance of Training

Especially in the modern era, due to the technological, sociological, political changes and innovations, the importance of training has been understood by most organizations. To cope with new technological challenges, to increase quality and productivity of their products, to continue their power, and even to subsist, many organizations focus on training or re-training of their personnel (Gladstone & Ozaki, 1991). Those organizations also demand their workers to be loaded with the skills that can help to reach their targets and to struggle with marketing or competitive challenges (Mastrofski & Ritti, 1996). In addition to technological innovations and marketing competitive, sociological trends, political reforms, and changes in organizational perspectives also force the organizations to train and retrain their personnel. For example, new laws and regulations require that organizations provide training about these issues to their personnel.

2.2.3. Typologies of Training

Because the interest of this study is police training, it is logical to focus on job training. O'Leary and his colleagues (2004) describe five types of job training. These are: Occupational training, remedial training, classroom soft skills training, postemployment training, and youth training programs (O'Leary, Straits, Wandner, & Research, 2004). This study is mostly relevant to occupational training and also postemployment training.

Occupational training: This type of training includes the short term occupational skill training which is important to increase job readiness. If it is provided in group settings, it is called classroom or institutional training. Often, this involves on-the-job training (OJT) provided in an experiential workplace context. The most basic example of this training is learning through watching someone in the work environment.

Postemployment training: Postemployment training supports continued employment and advancement in a specific occupational field or specific job. This training could combine classroom, related activities, and laboratory. Police in-service training can be seen as postemployment training.

2.2.4. Training in Policing

Police organizations generally give more importance to training than education (O'Rawe, 2005). Police training is a process in which officers gain the skills required to be able to achieve the tasks and goals of police duties (Kratcoski, 2004). In democratic societies, the goal of police training is generally "the capacity to make situational judgments which are in accord with democratic societal and legal norms and expectations" (Marenin, 2004, p. 108). If this kind of training cannot be done in democratic police organizations, organizational paralysis, ineffectiveness, misuse of authority and undemocratic policing will occur (Marenin, 2004). Moreover, if it is needed for efficient and effective provision of domestic disputes, corruption/riot control, use of force, drug enforcement, and COP, or if it is needed to improve the quality of police work, then training is the essential tool (Feltes, 2002; Mastrofski & Ritti, 1996).

Efficiency of police training is also important. Peace (2005) says three highlighted areas in order for effective police training. First, training of police should meet the needs

of a twenty-first century police officer. Second, training delivery should be consistent, and whether the training is meeting its aims should be evaluated. Third, training should be related to officer's duty (Peace, 2005). The most common critique is that the topics used in traditional police training curricula of the U.S. police only constitute 10 percent of police performance that officers spend on duty (Peace, 2005). That is, the traditional police training is not much more related to what the police do in the real world.

As a result of the changes in society, the nature of police work also changed in the 21st century, and this changing has a strong effect on police education and training (Kratcoski, 2004). This changing caused the need for improved and more police training. Arguably, the most important change in policing in the 21st century is the "Community Oriented Policing" approach. As noted earlier, the move toward COP requires a vast amount of contact between the officers and community, and forces the police organization to train their personnel on topics such as community policing philosophy, problem solving, orientation to service, integrity, leadership, communication, decision making, interpersonal skills, cultural awareness, coordination with other municipal agencies, etc. (Birzer, 1999; Bradford & Pynes, 1999; Chappell, 2007; Marenin, 2004).

Marenin (2004) suggests that contemporary training of police officers must be holistic, realistic, integrated, and contextuated. *Holistic training* refers to a learning cycle starting with a basic approach (including basic goals, roles and training philosophies), followed by formal instruction, accepted by officers, turning in to actions, and followed by evaluations of performance. *Realistic* indicates that training needs to be attuned to the realities and practicalities of police work. That is, it must focus on what the police officers are actually doing in their daily duties (Marenin, 2004). Thus, it is important to

analyze of workloads and daily routines before implementing realistic training. *Integrated* indicates that training needs "to stress general and abstract notions of democratic policing—*or changing world requirements*—and be oriented to the practical matter and manner of police work simultaneously" (italics are added, Marenin, 2004, p. 114). Finally, c*ontextuated* points out that all issues related to policing occur within a large social and international context. Therefore, most of what the police officers learn from training also comes from this large context and role of the officers in this context.

2.2.5. Typologies of Police Training

Generally there are two kinds of training for police officers: pre-service and in-service trainings (McCoy, 2006). Some countries (such as the U.S.) also offer field training. In addition, informal learning of police officers can be talked about.[8]

2.2.5.1. Pre-Service Training

In general, pre-service training can be defined as police education and training "followed by a several-month program of intensive physical conditioning, firearms use, study of departmental regulations and procedures and of the law, crises intervention techniques, and other topics" (Peterson, 1997, p. 19). In the U.S., this kind of training is called formal police academy training (Marenin, 2004). In some studies, especially related to community colleges, pre-service refers to a training process before the police academy (Etter, 1998). However, in this study, pre-service training includes all trainings prior to initial service.

The main pre-service training, police academy training, is responsible for delivering basic police officer training (Haarr, 2001). Academy training generally

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[8] This literature review part generally focuses on police training issues in the U.S. I will present how police trained in Turkey context in chapter III.

consists of military boot camp and preparation of academy students for the common skills of policing (Chappell, 2007). Some of these common skills are high-risk driving, using firearms, and the mechanic of arrest. Academy training is the basic training of the police.

2.2.5.2. Field Training

After the academy training, the rookies enter the police agencies where they will be working and go through another training program called Field Training (Chappell, 2007). Field training can be defined as a process in which the new police recruits receive formalized and on-the-job training from field training officers (FTOs) who are senior personnel selected and trained specially (Chappell, 2007; Sun, 2003). In the field training process, new-graduated-police officers learn to apply the skills and knowledge that they learned in the police academy. This can be accepted as supplementing academy training. Field training provides the opportunity to the new recruits to learn appropriate attitudes toward police roles and tasks and they become permanent members of the police force through meeting all the requirements (Sun, 2003). Field training depends on three underlying assumptions (Sun, 2003): 1) *Policing techniques cannot be learned exclusively in a classroom,* 2) *Knowledge and skills necessary to survive can be learned from experienced and skilled police officers,* and 3) *Learning can occur indirectly through imitation and reinforcement.*

2.2.5.3. In-Service Training

In-service training can be defined as training and professional development of staff of an organization which is often sponsored by the employer and usually provided

during normal working hours.[9] Clarke (2001) says that "In-service training within social service agencies is recognized as a key means through which staff are provided with the necessary knowledge and skills to improve overall agency performance and achieve the objectives of social policy" (p. 757). From an organizational and management viewpoint, the goal of in-service training is to increase efficiency, effectiveness; and work motivation (Rainey, 2003). Although we may not observe immediate skill development at the end of the in-service training programs, they might contribute to increasing performance levels (Bayley & Bittner, 1984).

2.2.5.4. Informal Learning of Police

This is not one of the main typologies of police training. However, police officers are generally exposed to informal learning throughout their careers. "Informal learning is a continuous and complex process for police officers and occurs in very diverse settings" (Birzer & Nolan, 2002, p. 245). As noted above, police officers face different kinds of situations requiring assessing community needs, identifying problems, identifying solutions, and implementing the solutions alternatives. It is clear that most of these skills are not learned in official training programs and different situations may require different skills. Therefore, many of these skills are learned informally when officers are working (Birzer & Nolan, 2002). Some studies indicate that informal learning in the work environment of police may result in learning of sub-cultural attitudes and values of the police (Ford, 2003). However, these sub-cultural attitudes may not be acceptable and can result in unintended police behaviors such as violation of human rights and corruption

[9] http://www.yeronga.tafe.qld.gov.au/tools/glossary/glossary_i.shtml

2.3. TRAINING TECHNOLOGIES AND ONLINE LEARNING

2.3.1. Training Technologies

Like the other fields, training is also influenced by technology. Some technological innovations such as microphone, speaker, projector, overhead projector, computer, software (e.g. Power Point), video player, CD/DVD player, television, radio, some video-conferencing systems, other media technologies, printed resources, internet, network systems, satellite have great potential for teaching, training, and learning (Bates, 2005; Galusha, 1997).

For example, the most common approach to training is the stand-up presentation or lecture that is used to transfer information from instructor to the students. Through effective and appropriate presentation techniques, the stand-up presentation or lecture can achieve this purpose effectively (Sullivan & McIntosh, 1996). Today, most instructors use overhead projectors and Power Point presentations. When they present to large groups, they can use microphones and speakers. When necessary, satellite, internet or video conferencing can also be used with the lecture. All of these technological innovations used in lecture are intended to facilitate the acquisition and learning process.

Moreover, advances in telecommunications technology have also provided the opportunity for personal and group education, and learning in distance education and training (Galusha, 1997). Therefore, one of the popular learning models of modern era is *distance learning*. Distance learning is defined as instruction received by learners who are in a different physical location than the instructor (Caffarella, 2002; Fact-Sheet, 2003). That is, the distinctive characteristic of distance courses is that teacher and student are geographically dispersed and there is a technologically based delivery system

(Murphy et al., 2007; Nelson, 1998). Furthermore, students' set their own pace of study is another key feature of distance learning programs (McKenzie, 2002). In the distance learning process, satellite, videotape, web-based video streaming, video conference, cable television, telephone conference calling, interactive television broadcasting, printed resources, or other technologies can be used (Galusha, 1997; Killion, 2000; Nelson, 1998).

The most important technique used in distance learning process is computer-based e-learning or online learning (M. Allen et al., 2004; Murphy et al., 2007). For approximately 20 years, the rapid and significant growth of the internet and its World Wide Web (WWW) system has been providing incredible opportunities for learning. During this time, internet and intranet resources have received important attention in the corporate environment and among trainers (Trombley & Lee, 2002). As a result of this interest, online learning is becoming a favored training option in industry, government, and higher education (Sitzmann et al., 2006).

2.3.2. Online Learning (E-Learning)

2.3.2.1. Definition of Online Learning

One of the obstacles to understand and analyze the online learning (e-learning) is that there is no standardized definition of it. That is, although online learning or e-learning is frequently used as a term in the literature, there are various definitions about what specifically constitutes e-learning. In some studies e-learning is defined as "learning that is delivered, enabled or mediated by electronic technology, for the explicit purpose of training in organizations" (Thornbory, 2003, p. 1). In other studies the phrase "electronic technology" is clarified. For example, National Governors Association

Commission on Technology and Adult learning and the American Society for Training & Development (ASTD) defines e-learning as "instructional content or learning experiences delivered or enabled by electronic technology" (as cited in Trombley & Lee, 2002, pp. 137-138). The internet and intranet are listed as the main electronic technologies through which learning is delivered. However, they also list CD-ROM and satellite-transmitted video as electronic technology delivering the learning. On the other hand, Hartley's (2001) e-learning definition includes internet, intranets, and other electronic *networks* by which learning is enabled (as cited in Vries, 2005).

Vries (2005) indicates that e-learning is used worldwide in order to refer the use of internet technologies for teaching and learning. He also presents some alternative terms, such as tele-learning, tele-education, distance learning, web-based learning, and online learning. He says that all of these terms refer to the use of network technology to deliver education and training from one way to another (Vries, 2005). In this current study, e-learning and online learning is used interchangeably to refer to *learning that is delivered and enabled through internet or networked computer systems.*

2.3.2.2. Types of Online Learning

Thornbory (2003) describes three types of online learning: a) web-based training, b) supported online learning, and c) informal e-learning. Both web-based training and supported online learning are formal learning. In *web-based training*, interaction with tutor is minimized and there is no collaboration with other learners. This type of online learning includes individual learning, it generally focuses on content and it is delivery-driven. *Supported online learning* focuses on learner more than content, and it is activity-driven instead of delivery-driven. In supported online learning, importance is given to

small-group learning, there is significant interaction with instructor, and there is considerable interaction with other learners. The opposite of these two types of online learning, *informal e-learning,* is generally practice-driven and organizational learning. It falls under the concept of life-long learning (LLL) and professional development. In this type of learning, the focus is on group, participants act as learners and tutors, and there is multi-way interactions among participants (Thornbory, 2003)

2.3.2.3. Online Learning Methods

Synchronous, asynchronous, and blended are the primary methods used within online learning processes (Trombley & Lee, 2002; Waggoner & Christenberry, 1997; Welsh, Wanberg, Brown, & Simmering, 2003). In *synchronous online learning method,* both the instructor and the learners are all online concurrently, and there is an interaction among them on real time basis. For example, audio and video conferencing, chat-rooms, and instant messaging are synchronous online learning methods. On the other hand, it can be said that most of the online learning is asynchronous in nature (Welsh et al., 2003). *Asynchronous online learning* does not require any participant interaction and it is done in a totally self-paced learning environment. However, there can be still non-real-time interaction. For example, bulletin boards, discussion groups, and email are non-real-time interaction methods. Online learning can be also presented in different combinations of synchronous and asynchronous methods known as *blended learning* (e.g. hybrid courses) (Trombley & Lee, 2002; Welsh et al., 2003).

2.3.2.4. Learner & Role of Instructor in Online Learning

Because of the main characteristics of online learning, learners of online learning classes are generally different from traditional students. Therefore, they can be called

non-traditional students (Summers, Alexander, & Whittaker, 2005). Non-traditional students are less able to take face-to-face courses than traditional students due to jobs, family obligations, age, health problems, etc. These students are generally seeking time and place convenience in learning and they want to control their learning pace and process; therefore, they prefer online learning.

On the other side, instructors of online learning classes are unique due to their role in online learning environment. In their studies, Heuer & King (2004) examine the perceptions of 324 educators/participants, who attended the online Anytime Anywhere Learning Professional Development School (AALPDS). The results reveal that the roles of online instructors are multidimensional, active and evolving during an online course. Participations of this research expected that the instructor of online learning classes to act as 1) a planner, 2) a role model, 3) a coach, 4) a facilitator, and 5) a communicator (Heuer & King, 2004).

2.3.3. Advantages and Disadvantages of Online Learning

2.3.3.1. Advantages

It is clear that learners of online courses can be offered high independence, greater productivity, and new experiences (King, 1998). Advocates of online learning point to five advantages: convenience, flexibility, accessibility, worldwide training, and cost advantage (Killion, 2000; Murphy et al., 2007; Sitzmann et al., 2006; Thornbory, 2003; Trombley & Lee, 2002).

Convenience generally includes time and place convenience. That is, learners can join online learning classes when ever and where ever they want (Trombley & Lee, 2002). Moreover, learners no longer have to attend a lecture only for one specific time;

they can review a lecture several times in online environment (Napier, 2005). In addition to learners, instructors also have some convenience due to online learning. For example, online learning increases instructors' ability to track learner activities and mastery of material through online exams, quizzes, learner profile, etc (Welsh et al., 2003).

In terms of flexibility, through online learning, flexible programs can be provided and offered to the learners with different learning levels or with different individual needs (Thornbory, 2003). Online learning is also accessible; it provides learners easy access to other resources, materials, and subject experts (Thornbory, 2003; Trombley & Lee, 2002). Because of reduced-cost and high-rate of data transmission ability of computer and internet technologies, it has also become more accessible to a wider population (Murphy et al., 2007). In terms of its worldwide training advantage, online learning is especially important for big public and private organizations which have a lot of sub-units and personnel working in different parts of the country and world. These kinds of organizations have a strong need to deliver consistent training across multiple locations and to many people quickly (Welsh et al., 2003). Since there is not any limitation in terms of instructor and classroom capacity, more people can be trained simultaneously and in less time through online learning.

The other potential advantage of online learning is cost. Actually, initial development of an online learning class is generally more expensive than the classroom training (Thomas, Carswell, Price, & Petre, 1998; Welsh et al., 2003). However, after the development of the online learning class, it is cheaper than classic classroom learning if courses are repeated several time, if a lot of learners attend the courses, if learners work or live in different places (Welsh et al., 2003).

2.3.3.1. Disadvantages

The first mentioned disadvantage of the online learning is *lack of interaction.* Direct interaction between student and teacher observed generally in face-to-face classes is very beneficial and important in a learning environment (Brown & Liedholm, 2002). However, especially for asynchronous online classes, interaction with peers and instructor may be low. Some believe that lack of interaction decreases the attractiveness of online learning (as cited in Welsh et al., 2003).

In addition, *readiness for online learning* such as lack of computer and internet knowledge and skills (at least basic level) (Galusha, 1997), *security problems* relevant to the internet (Trombley & Lee, 2002), *hidden costs* including the expense of infrastructure and routine maintenance (Killion, 2000), *limit to accessibility* to a particular technological platform, computer, or internet (Creedy et al., 2007; Murphy et al., 2007), and *lack of support and services* providing tutors, academic planners/schedulers, and technical assistance (Galusha, 1997) are also seen as the main disadvantages of the online learning.

2.3.4. Effectiveness of Online Learning

Studies focusing on effectiveness of online learning found mixed results. Brown and Liedholm (2002) examined performance of students in three different modes of instruction (face-to-face, hybrid, and online) in Principles of Microeconomics courses at Michigan State University. Their results showed that there was no significant difference in predicted scores of the students across these three modes of interaction when measuring basic level understanding of students. However, in the exams requiring the deepest understanding, their results showed that the scores of students in face-to-face

class were significantly better than the scores of students in online class (Brown & Liedholm, 2002).

In a meta-analytical study on distance education including online learning, Zhao et al. (2005) attempted to identify factors affecting the effectiveness of this kind of learning. After the examination of 51 scientific studies on this issue, their results suggested that there was no significant difference between distance learning and face-to-face learning in terms of effectiveness on learning.

In another meta-analytical study, Sitzmann et al. (2006) focused on effectiveness of Web-based instruction (WBI) relative to classroom instruction (CI) for teaching declarative and procedural knowledge. Whereas they defined declarative knowledge as "trainees' memory of the facts and principles taught in training and the relationship among knowledge elements", they defined procedural knowledge as "information about how to perform a task or action" (Sitzmann et al., 2006, p. 627). Examining 96 studies (including published, unpublished, and dissertations), Sitzmann et al (2006) found that web-based instruction was 6 percent more effective than classroom instruction for teaching declarative knowledge. However, their results did not show any significant difference between WBI and CI in terms of effectiveness for teaching procedural knowledge. Moreover, Sitzmann et al (2006) found that when the same instructional methods (such as lecture, reading textbooks, assignments, group discussion, etc.) were used to deliver training, effectiveness of WBI on learning declarative knowledge disappeared. More specifically, students learned the same amount of declarative knowledge from WBI and CI. As a result, they suggested that "instructional methods rather than delivery media determine learning outcomes" (ibid., p. 654).

Finally, Creedy and her colleagues examined undergraduate nursing students' perceptions of learning environment enhanced by web, their computer knowledge, skills, and use of technology, and how their satisfaction were affected by these factors (Creedy et al., 2007). Their results revealed that students had positive and significant satisfaction of web-enhanced learning environment. However, these perceptions are affected in part by students' computer literacy skills and use of technology (Creedy et al., 2007).

2.3.5. Use of Training Technologies and Online Learning in Police Training

Although there are many studies focusing on training technologies and online learning in general, there are few studies related to online training of the police.

2.3.5.1. Training Technologies Used In Police Training

Police training has also been influence by technological innovations. For example, due to low cost and higher availability of microcomputer technology, different kinds of virtual reality driving simulators (VRDSs) have been developed (Olsen, 1995). This technology can be used in different areas of the police training such as driver training, and emergency vehicle operations.

The other technological innovation used in police training is a scenario-based training model utilizing cost-effective, dialogue-driven, interactive video technology (Tootell, Graham, & Baiguerra, 2003). Through realistic simulations of scenarios, multimedia scenario-based training provides opportunities to the students "to develop time-critical decision making skills and improve judgment in a virtual environment" (Tootell et al., 2003, p. 1).

Videoconferencing is another technological innovation used in police training (especially in distance training of the police). For example, by using a videoconferencing

system, the police detectives and the forensic experts can produce a live, two-way training session in which they focus on a real criminal events though they are far away from each other (Waggoner & Christenberry, 1997).

An additional technological innovation is the Law Enforcement Training Network (LETN) which provides opportunities to its subscribers to provide a variety of training and educational programs related to law enforcement topics. Another initiative is the Online Police Academy (OPA) organized by Millersville University of Pennsylvania. OPA eliminates the limited number of qualified instructors and links trainees and instructors from all over the world. Furthermore, the FBI provides Law Enforcement Satellite Training Network (FBITN) using satellite technology to present teleconferences on different kinds of criminal justice topics, and Law Enforcement Online (LEO), which provides free opportunities to law enforcement officers to conduct research, take course online, and communicate with peers (Waggoner & Christenberry, 1997)

2.3.5.2. Online Learning for Police Training

Like the other organizations, interest of police organizations in online training has been also increasing. The reason for this increasing interest is similar to the reasons of the other types of organizations. As discussed earlier, these include:

1- Online training may be considered a more cost-effective training method when compared with traditional face-to-face training (Jang, 2005; see also McKenzie, 2002).

2- Online training programs may allow the police to meet changing topics and expectations (Napier, 2005).

3- Online training programs can allow police to address the challenges of rotating shifts and the time demands of command staff (McKenzie, 2002; Napier, 2005).

4- Because of work load, limited time for training, long distance of training centers, limited classrooms in training environment, all personnel cannot attend continuous and systematic training programs. However, in an online training environment, there is no class or time limitation; officers can attend where and when they want. Therefore, online training programs can reach a wider range of officers (Jang, 2005).

2.3.5.3. Some Studies Related to Online Police Training and Effectiveness of It

As mentioned before, there are few published scientific studies focusing on online learning and implication of it in police training. Therefore, it can be said that in terms of scientific research this area is unexplored. Here three of the exceptional studies related to online police training are presented.

In 2005, Jang attempted to provide information about the current status of in-service training in Texas law enforcement agencies and to review law enforcement agencies' perception about distance learning methods including online learning. Forty municipal departments, six sheriff's offices, and the Texas Department of Public Safety participated in this study.[10] A survey instrument including questions related to in-service training policies in general, cost issues, training priorities and perceptions of the participants about distance learning methods for in-service training was used. The results showed that 87 percent of the agencies did not have any plan to organize distance learning; 94 percent of respondents indicated that if same program was offered through

[10] There was no any clear explanation about selection process of the sample.

distance or online learning method as well as traditional method, the officers of their agencies would prefer traditional training methods. In terms of perception of the effectiveness of online training, unlike studies of the effectiveness of online learning in different disciplines, 68 percent of the respondents emphasized that online in-service training was inferior to traditional face-to-face training (However, the author did not discuss why majority of the respondents did not believe in effectiveness of the online learning). Only 28 percent indicated that online learning as effective as its traditional face-to-face counterpart, and even among these the perceptions of online learning were still negative. To sum up, Jang (2005) showed that the perception of in-service training through online learning perspectives remained negative, and traditional training methods were strongly preferred. However, this study was an exploratory study with a small sample size.

The other major research was conducted by Schmeeckle (2003) and consisted of two studies. The general goal the researcher was to provide a large evaluation of online training in a specific context other than nonacademic population. The aim of the first study was to evaluate the efficiencies and effectiveness of online training compared to traditional classroom training with Jail Management trainees in the Nebraska Law Enforcement Training Center. This study was conducted through an experimental design in which participants were assigned to either online or face-to-face training randomly. In order to measure efficiencies, the researcher used time and cost calculations of both training programs. In order to measure instructional effectiveness, learning, motivation, and attitudes of the participants were used. The results of this study showed that there was no difference between online and traditional learning in terms of effectiveness;

online learning was as effective as traditional learning. This study also showed that online learning was more efficient than traditional learning (Schmeeckle, 2003).

In the second study, Schmeeckle experimentally tested certain elements of the online training—especially the type of media employed. The online training groups were divided into three groups: text only, audio with text, and video with the text. In contrast to theory indicating that multiple video enhances learning, motivation, and attitudes of students in learning environment, the results of the second study showed that there were no differences in participants test scores if they received training with text only, video with the text, and audio with the text (Schmeeckle, 2003).

Finally, Peyne (2002) attempted to evaluate web-based training as an alternative to the traditional training. Specifically, the purpose of the study was to understand whether there is any difference between these two methods in terms of cognitive gain (learning). Peyne focused on a hate crime identification and scoring course organized by the FBI's Uniform Crime Reporting Program. This course was taught through two different methods of delivery, online and face-to-face. Participants were both civilian and sworn law enforcement personnel. The researcher used a pretest posttest control group design. The results revealed that there was no significant difference between online and traditional training in terms of participants' cognitive gains. Moreover, students were equally satisfied with both instruction methods (Pyne, 2002).

In sum, although Jang's study revealed that police organizations had negative perceptions of online in-service training programs and traditional training methods were strongly preferred, Schmeeckle (2003) and Peyne (2002) showed that there was no

difference between online and traditional learning in terms of effectiveness on officers' learning and supported the use of online learning in law enforcement training.

2.4. ADULT LEARNING

2.4.1. Adult Learners

It is clear that police officers are adult learners. Some important characteristics or attributes of the adults are self-directedness (autonomous and independent), having experience (rich learning source), awareness of what they should do something and why, having different motivations (such as making more money, getting promotion, self-development, etc.), being problem-centered (their orientation is centered on their daily problems), and in terms of learning, voluntary participation (Kerka, 2002; Knowles, 1990; Merriam et al., 2007). All of these characteristics are important in the process of helping adults learn. These characteristics of adults also show to what extent the adult learners are different than learners who are children or youth. For example, during the learning process, children are dependent upon the teacher (or parents) (Knowles, 1990); thus, their learning process is teacher centered. They have limited experiences. Because of this, children do not have opportunity to combine new learning materials with the previous experiences in order to improve learning ability. Children are also ready to learn based on age level, their orientation to learn focus on a subject matter, and through external rewards and punishments, they are motivated to learning (Kerka, 2002). Consequently, it can be said that the major differences between adults and children are that adults have rich experiences enhancing their learning process; they are self directed (that is, their learning process is learner-centered); their motivations are not only external

but also internal (Knowles, 1990), and they have capacity of critical thinking that facilitate transformative learning of adults (Vaske, 2001, as cited in Kerka, 2002).

2.4.2. Theories and Models on How Adults Learn

Learning can be defined as a change in an individual as a result of interaction with that individual and his/her environment; the individual acquires habits, knowledge, and attitudes, and he/she can fill his needs and feel his/her self capable of dealing adequately with his environment (Burton, 1963, as cited in Knowles, 1990).

There are many learning theories related to adults. Some of the most popular adult learning theories and models include andragogy theory, self-directed learning theory, transformative learning theory, and experiential learning models. Because theoretical approach of this study is mostly grounded in self-directed learning, self-directed learning approaches will be examined separately and comprehensively.

2.4.2. 1. Andragogy

Andragogy is a term used for theory of adult learning in order to differentiate it from the *pedagogy,* theory of youth learning (Knowles, 1990). Although this term had been used in European literature to refer the adult learning, as a concept, andragogy was first introduced into the American literature with Knowles' article "Androgogy, not Pedgogy" in 1968. Depending on this term, Knowles formulated an adult learning theory (Knowles, 1990; see also Rachal, 2002). Andragogy theory focuses on factors that influence or shape the nature of the adult learning process. These factors include being autonomous, independent, and self-directed; prior experiences; being ready to learn; being problem-centered, intrinsically motivated and volunteering (Kerka, 2002). Based

on these attributes, Knowles (1980, 1984) advances six assumptions of the adult learning theory:

1- As a person matures, his or her self-concept moves from that of a dependent personality toward one of a self-directing human being.
2- An adult accumulates a growing reservoir of experience, which is a rich resource for learning.
3- The readiness of an adult to learn is closely related to the developmental tasks of his or her social role.
4- There is a change in time perspective as people mature-from future application of knowledge to immediacy of application. Thus, an adult is more problem centered than subject-centered in learning.
5- The most potent motivations are internal rather than external.
6- Adults need to know why they need to learn something. (as cited in Merriam et al., 2007, p. 84)

What we understand from these assumptions is that because adults are aware of what they need to know and why, they can direct their learning process; that is, adult learning process is self-directed and experiential. In addition, experiences of adults make them ready to learn; adults become ready to learn how they can deal with the real-life events. For example, in high school, student do not ready to learn how they can earn money, how to establish marital relationship, but after graduation they most probably become ready. Moreover, in terms of orientation, it can be said that adults try to learn what can help them to solve their problems or to do their tasks. Finally, adult learners

commonly have internal motivators such as quality of life, self-esteem, and job-satisfaction (Knowles, 1990).

The problem is that, although this theory has been most popular and primary model for adult learning for approximately 40 years, in terms of testing the validity of its assumptions or usefulness in predicting behavior of adult learners, little empirical study has been conducted (Merriam et al., 2007). Rachal (2002) examined eighteen studies related to andragogy conducted from 1984 to 2001. This paper showed that most of these studies had tried to evaluate the effectiveness of andragogy comparing it with pedagogy. In terms of satisfaction, achievement, and attendance, the results of these studies were mixed (Rachal, 2002).

2.4.2. 2. Experiential Learning

As Lindeman (1926) said, "experience is the adult learners living textbook" (as cited in S. Brookfield, 1995). According to Dirkx and Lavin (1991) "learning takes place within the crucible of our life experiences and cannot be separated from them" (p. 7). This learning is done in a variety of ways. Merriam at al. (2007) depict these ways: people learn "as the result of a direct embodied experience that engaged them mentally, physically, emotionally in the moment...learn(ing) from a simulated experiences or reliving a past experience...people may make sense of their experience through collaboration with others in a community" (p. 159). Because people face new experiences every time, naturally previous experiences contribute to understanding and learning of new experiences; therefore, learning is grounded in experience and it is a continuous process (Kolb, 1984). Although there are various theoretical perspectives, the central issue in these theories is that "learning from experience involves adults'

connecting what they have learned from current experiences those in the past as well to possible future situations" (Merriam et al., 2007, p. 185).

Kolb & Fry (1975) argue that learning occurs in a cycle. This cycle includes four different abilities or steps, and learning can begin at any of these steps. This cycle includes concreting of experience after or during the learning process of a topic, making reflective observation on this experience under the light of new knowledge, abstracting the concepts come out from the experiences, and trying to apply or think to apply how these concepts can be implemented in a new situation (as cited in M. K. Smith, 1996).

2.4.2. 3.Transformative Learning Theory

"Transformative learning occurs when individuals change their frames of reference by critically reflecting on their assumptions and beliefs and consciously making and implementing plans that bring about new ways of defining their worlds" (Imel, 1998, p. 1). Transformative learning theory was first introduced by Jack Mezirow in 1978 (Imel, 1998). Mezirow's Transformative learning process consists of four main components: experience, critical reflection, reflective discourse, and action. This theory is also grounded in theory of social knowledge and the related notion of emancipatory learning. Emancipatory learning includes self-reflection. The emancipator approach emphasizes that transformative learning is a self-directed learning process. Cranton (1996) supports this idea when she discusses professional development as transformative learning. She says "becoming self-directed learners of our practice can involve reconsidering and perhaps changing our beliefs and assumptions about education: in other words it can be transformative learning" (Cronton, 1996, p. 110).

Experience is also most important in transformative learning. As human beings and adults, we have a lot of experiences and meaning perspectives formed through these experiences that shape our perceptions of ourselves, others, and our surroundings. And, these past experiences shape the way in which we assimilates new experiences (Cronton, 1996). However, to achieve transformative learning, having the experience is not enough; we should make reflection on these experiences and our meaning perspectives. This is critical reflection in transformative learning. That is, "the learner must critically self-examine the assumptions and beliefs that have structured how the experience has been interpreted" (Merriam et al., 2007, p. 134). However, not all reflections leads to transformative learning; according to the result of critical reflection, our perspective on practice can be changed or we confirm current practice (Cronton, 1996). It is seen that SDL, learning from experience and reflection (critical reflection) are also important in our understanding of learning as transformative.

In addition, transformative learning includes two more elements, reflective discourse and action. Discourse can be defined as a conscientious effort in order to find agreement to build a new perception or understanding (Merriam et al., 2007). "Discourse can occur in one-to-one relationships, in groups, and in formal educational settings" (ibid. , p. 134). The last component of transformative learning is action which may include immediate action, delayed action, or reasoned reaffirmation of an existing pattern of action. The range of action is very broad in transformative learning; it is from making decision about something to engaging in radical political protest (Merriam et al., 2007).

To sum up, it is seen that that the emphasis on andragogy, experiential and transformative learning all relate to the overall theme of self-directed learning.

2.5. SELF-DIRECTED LEARNING

In the adult education field, self-directed learning (SDL) has been accepted as a very important area of study (Beswick, Chuprina, Canipe, & Cox, 2002). Since Allen Tough's book called "*The Adult's Learning Project*" published in 1971 and Knowles' works in 1971 and 1975, SDL has drawn attention of researchers and writers not only from the field of adult education but also from outside of the field (Merriam et al., 2007; O'Shea, 2003). Even today, many education and training sectors (e.g. public schools, colleges, universities) indicate that one of their primary goals is to make their students or trainees self-directed lifelong learners (Merriam et al., 2007). Since early studies of SDL, researchers have attempted to establish conceptual models, to identify personal attributes and characteristics of self-directed learners, to define goals of SDL, and to determine how the SDL process should be (Brockett & Hiemstra, 1991; Candy, 1991; Garrison, 1997; Grow, 1991; L. M. Guglielmino, 1977; Knowles, 1975; Oddi, 1986). Although it first occurred as an assumption used to define one characteristic of adult learners, SDL is now a distinct area of scholarship.

2.5.1. Definition of Self-directed Learning

Although SDL has long been used as a term, there is no single definition of it. Even some indicate that if we try to capture the essence of SDL in a single definition, this may be a misconception (Kerka, 1999). It can be said that the concept of SDL can be seen in different definitions and in different formats in adult learning literature.

The first comprehensive definition of the SDL is Tough's (1971) definition. According to Tough, SDL is a form of study called as self-planned learning (Tough, 1971). Tough defines self-planned learning as a project in which "the learner himself is

responsible for most of these day-to-day decisions and arrangements, especially the decisions about what and how to learn in each episode" (pp. 93-94).

It can be said that in the literature, the most common definition of SDL is Malcolm Knowles' definition. Although he showed self-directedness of adult as one assumption of his andragogy theory, Knowles also examined self-directed learning separately in his book "*Self-Directed Learning*" in 1975. According to Knowles, self-directed learning is a process in which "individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, p. 18). In his theoretical approach, Knowles shows teacher-directed learning as opposite of SDL.

Some scholars have critical approaches to the previous definition of SDL (S. Brookfield, 1985; Mezirow, 1985). According to Brookfield (1985), SDL had become the goal and method of adult education because of a number of doubtful propositions (e.g., adults are self-directed, and continuing education should be concerned with developing adults' powers of self-direction etc.). But, he didn't reject the importance of SDL in the adult learning process. Brookfield defines SDL as a cognitive process in which reflection and action has importance; through these reflection and action, an individual can learn the way of changing his/her perspectives, changing his paradigms, and replacing his way of how to interpret the world (S. Brookfield, 1986). Like Brookfield, Mezirow also has critical approach to previous definition of the SDL. According to him, SDL is not only application of some techniques but also adults' capacity and capability for critical self reflection and for shifting their lives (Mezirow, 1985).

In their definition, Brockett & Hiemstra (1991, p. 24) indicates that SDL is comprised of two distinct dimensions: the process in which "a learner assumes primary responsibility for planning, implementing, and evaluating the learning process", and personality aspect (that is, learner self-direction) which "centers on a learner's desire or preference for assuming responsibility for learning". That is, these authors indicate that characteristics of the instruction of learning environment and individual characteristics of the learner constitute SDL (Brockett & Hiemstra, 1991, p. 24). Finally, Candy (1991) points out that SDL includes both dimensions of product and process. In his definition, there are four elements: personal autonomy, self-management, learner control, and autodidaxy. Personal autonomy refers to SDL as a personal attribute; Self-management refers to the willingness and capacity to conduct one's own education; learner control refers to self-direction as a mode of organizing instruction in formal settings; and autodidaxy refers to non-institutional pursuit of learning opportunities in the natural social settings (Candy, 1991).

2.5.2. Theoretical Orientation of Self-Directed Learning

The existing theoretical endeavors and models of SDL depends on four theoretical orientations (Brockett & Hiemstra, 1991; Candy, 1991; Owen, 2002): humanism, behaviorism, constructivism, and critical perspectives.

Most of the adult learning theories, such as andragogy, transformative learning, and self-directed learning theories depends on *humanistic orientation* (Merriam et al., 2007). In humanist orientation, learning is considered from " the perspective of the human potential for growth" (Merriam et al., 2007, p. 281). Assumptions underlying humanistic orientation can be summarized as follows (Elias & Merriam, 1980; as cited in

Brockett & Hiemstra, 1991, pp. 124-125): "1- Human nature is inherently good; 2- individuals are free and autonomous...; 3- each person is a unique individual with unlimited potential for growth and development; 4- self-concept...is an important influence on growth and development; 5- individuals possess an urge toward self-actualization, the highest level of personal growth; 6- personality defined realities play an especially important role in humanistic thought; and 7- individuals possess a sense of responsibility to themselves and others."

The second orientation that has an effect on the SDL field is *behaviorism* (Brockett & Hiemstra, 1991; Owen, 2002). There are three basic assumptions of behaviorist orientation related to the process of learning: 1- behavioral change make obvious learning, 2- environmental elements determine learning, and 3- in explanation of learning process contiguity and reinforcement[11] are central (Merriam et al., 2007). According to Brockett & Hiemstra (1991) two practices rooted in behaviorism are valuable to SDL: learning contracts and the systematic instructional planning process.[12]

The third orientation underlying self-directed learning is *constructivism*. The basic assumption of constructivism is that "learning is a process of constructing meaning; it is how people make sense of their experience" (Merriam et al., 2007, p. 291). The central issue in constructivism is the idea assuming that individuals are self-constructing, and through the implementation of their personal worldview, they can reconstruct their

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[11] Contiguity refers "how close in time two events must be for a bond to be formed" and reinforcement refers "any means of increasing the likelihood that an event will be repeated" (Merriam, Caffarella, & Baumgartner, 2007, p. 278)

[12] Learning contracts is defined as a written plan. In this plan, what a person will learn as a result of some identified learning activities is described. Shortly, "learning contracts make it possible to individualize the teaching-learning process" (Brockett & Hiemstra, 1991, p. 223), and it helps to facilitate and promote self-directed learning. On the other side, systematic instructional planning or design process refer to planning of instructional process previously, this systematic plan is generally comprised of four main phases initiating, planning, managing, and evaluating (Brockett & Hiemstra, 1991, p. 106).

circumstances (Candy, 1991). Constructivism is compatible with the notion of SDL because "it emphasizes the combined characteristics of active inquiry, independence, and individuality in a learning task" (Candy, 1991, p. 278).

The last orientation is *critical approach.* According to those who are advocates of this orientation, SDL should be seen in the field of emancipatory adult education, and the aim of SDL is to increase individual's consciousness and critical awareness (S. Brookfield, 1991; Hammond & Collins, 1991; Mezirow, 1985). Mezirow (1985) mentions three interrelated functions of adult learning: instrumental learning, dialogic learning, and self-reflective learning. In the self-reflective learning definition, Mezirow says that individuals reorganize the old meaning scheme or perspective and incorporate new insights. He, then, calls this as perspective transformation in his theory of transformative learning (Mezirow, 1991) . Brookfield (1991) also focuses on critical self-reflection. He mentions three interrelated phases constituting critical reflection: identification of assumptions of individuals' thoughts and actions, comparison of accuracy of these assumptions with their experiences of reality, and making these assumptions more inclusive and integrative, reconstitution of them (S. Brookfield, 1991).

2.5.3. Theoretical Approaches of SDL & the PRO Model

Depending on Merriam et al. (2007) and Merriam (2001), theoretical approaches and models of SDL can be examined under three categories: according to their perspective about goal of SDL, their focus on process and application of SDL, and their focus on self-direction as a personal attribute of learners. It is necessary to mention that one theoretical approach or model can be in more than one category. [13]

[13] The PRO model is examined in section 2.5.3.4.

2.5.3.1. Goal of Self-Directed Learning

There are three main goals of SDL mentioned in the literature: enhancing the ability of adult learners so that they can be self-directed in their learning, fostering transformational learning as central to self directed learning, and promoting emancipatory learning (Merriam et al., 2007). According to the theoretical approaches based on humanistic orientation, the goal of self-directed learning is to develop the learners' capacity to be self-directed (Merriam, 2001). The assumption of the goal of enhancing the ability of adult learners is that facilitator's (trainer) responsibility is to help learners so that they can learn themselves in their training programs and they can plan, achieve, and evaluate their learning process (Merriam et al., 2007).[14] Tough's (1971) self-planned learning approach, Knowles' (1975) SDL approach, and Bockett & Hiemstra's (1991) PRO model see the goal of SDL as enhancing the self-direction ability of adult learners.

On the contrary, theoretical approaches from critical orientation advocate that the goal of self-directed learning is fostering transformational learning and promoting emancipatory learning. Fostering transformational learning is related to critical self-reflection which can lead important personal transformations (Mezirow, 1997). Critical self-reflection can be basically defined as reflection on previous or current experiences and our meaning perspectives (Cronton, 1996). According to the theoretical approaches under this category, transformational learning helps individuals to understand themselves, and the critical reflection component of transformational learning is also the foundation

[14] This is an appropriate assumption for training programs which are delivered online because of the nature of the online learning environment. For example, generally in online training programs, participants do not have to take a course in a specific time; they have to plan their learning process. Moreover, they are generally alone; so, they should know how to learn themselves.

of promoting emancipatory learning and social action (Merriam et al., 2007), which is the third goal of SDL.

2.5.3.2. Self-Directed Learning as a Process

Some theoretical approaches and models see the SDL as a process. Knowles' (1975) definition of SDL mentioned above guides for those approaches. There are a number of theoretical models produced by regarding the SDL as a process. These models can be examined under three categories (Merriam et al., 2007): linear, interactive, and instructional models.

Linear models: Linear models are early models and indicate that SDL is linear in nature. The assumption of the linear model proposed by Tough (1971) and Knowles (1975) is that in order to reach their learning goals, adult learners move through a serious of steps in a self-directed manner (as cited in Merriam et al., 2007). Tough's model is comprised of 13 preparatory steps for self-directed (or self-planned) learning. These are: 1- deciding detailed knowledge and skill, 2- deciding activities, materials, resources, and equipment for learning, 3- deciding where to learn, 4- setting specific deadlines or intermediate goals, 5- deciding when to learn, 6- deciding the pace, 7- estimating level or progress, 8- detecting blocks and inefficiencies, 9- obtaining or reaching resources or equipment, 10- preparing a room or other physical conditions, 11- obtaining money, 12- finding time for the learning, and 13- increasingly motivation or dealing with motivational blocks (Tough, 1971, pp. 116-117). Knowles' (1975) model, on the other side, is comprised of seven steps: 1- climate setting; 2- planning; 3- diagnosing needs for learning; 4- setting goals; 5- designing a learning plan; 6- engaging in learning activities; 7- evaluating learning outcomes (Knowles, 1975, pp. 34-37 and 40-41).

Interactive models: Opposite of linear models, interactive models show that SDL process is not linear and well planned. The assumption of interactive models is that episodes of self-directed learning are interacted with some factors, such as personal characteristics of learners, opportunities found in learners' environment, context of learning, and cognitive process (Merriam et al., 2007). The PRO model examined later can be given as an example for this type of models.

Instructional Models: This type of models represents "frameworks that instructors in formal settings could use to integrate self-directed methods of learning into their programs and activities" (Merriam et al., 2007, p. 117). One of the most popular instructional models is Grow's (1991) Staged Self-Directed Learning model (SSDL). Proposition of SSDL is that "learners advance through stages of increasing self-direction and that teachers can help or hinder that development. Good teaching matches the learner's stage of self-direction and helps the learner advance toward greater self-direction" (Grow, 1991, p. 125). The SSDL model outlines how instructors or trainers can help learners to become more self-directed in their learning environment. In this model there are four stages of learners: a) dependent learner, b) interested learner, c) involved learner, and d) self-directed learner. For each stage, learners become more self-directed than the previous stage. Grow also indicates that teaching strategies should be individualize and matched the self-direction stage of learner. He also shows four different teaching strategies matching learner's self-direction stage: a) authority, expert, b) salesperson, motivator, c) facilitator, d) delegator (Grow, 1991). As it is seen, this module assumes that individuals do not enter a learning context with a same level of self-

directedness; their self-directedness may vary from dependent (the lowest level of self-directedness) to self-directed learner (the highest level of self-directedness).

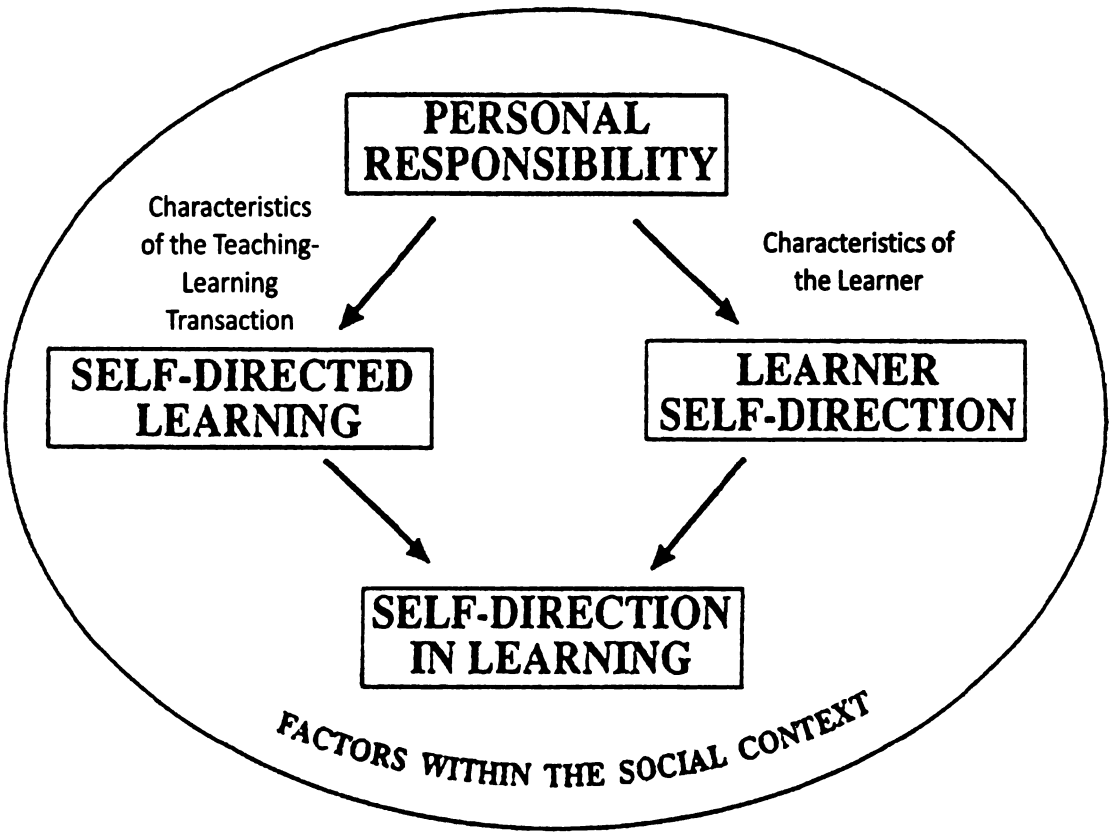
2.5.3.3. Self-Direction as a Personal Attribute of Learners

Some theoretical approaches accept self-direction as a personal attribute of learners. The main assumption advocated by this group is that "learning in adulthood means becoming more self-directed and autonomous" (Merriam et al., 2007, p. 120). According to these approaches, self-direction is an individual trait of adult learners. Especially in Knowles' (1975, 1990) studies—in his andragogy theory and his self-directed learning approach—and in Brockett and Hiemstra (1991), the importance of taking into account self-direction as a personal attribute of learners is seen. In terms of research, this issue has been studied by researchers through using some instruments which assess readiness to SDL and the presence of SDL as a trait (L. M. Guglielmino, 1977; Oddi, 1986).

2.5.3.4. *PRO Model*

As mentioned, the theoretical framework of this study is mostly based on the Personal Responsibility Orientation (PRO) model. This model depends on humanistic orientation of learning. It presents a theoretical framework to understand SDL of adults. According to this model SDL is comprised of two dimensions: 1- instructional method process (which is called self-directed learning), and 2- personality characteristics of individual (called learner self-direction). These authors designed this model "to recognize both the differences and similarities between self-directed learning as an instructional method and learner self-direction as a personality characteristic" (Brockett & Hiemstra, 1991, p. 26). The figure 2 shows the framework of PRO model.

Figure 2: The Personal Responsibility Orientation (PRO) Model



Source: Brockett and Hiemstra, 1991, p.25. Reprinted by permission of the authors.

The central concept of this model is *personal responsibility*. Through this concept, the authors want to state that people assume ownership of their actions and thoughts (Brockett & Hiemstra, 1991). They emphasize that "within the context of learning, it is the ability and/or willingness of individuals to take control of their own learning that determines their potential for self-direction" (ibid., p. 26). According to Brockett & Hiemstra (1991), each person characteristically has some degree of personal responsibility. The importance of personal responsibility for self-direction indicates that the learning process primarily focus on individual instead of larger society. Through getting responsibility of his/her actions and thoughts, an individual also assumes responsibility for his/her actions' consequences. Consequently, personal responsibility

concept of PRO model means that "learners have choices about the directions they pursue as learners" (Brockett & Hiemstra, 1991, p. 28).

The other concept of PRO model is *self-directed learning*. Basically, it can be said that as a term, self-directed learning refers to an instructional method. That is, it is a teaching and learning process in which learning activities are planned, implemented, and learning is evaluated (Brockett & Hiemstra, 1991). This concept depends on the process orientation mentioned above and it focuses on a teaching and learning transaction. When we look at this concept through the perspective of an individual's self-direction, this concept is related to factors which are *external* to an individual learner.

On the contrary, the third concept of the PRO model, *learner self-direction*, is related to the personal orientation and personal characteristics of adult learners. Brockett & Hiemstra call attention to importance of understanding characteristics of successful self directed adult learners. Comparing adult learning and children learning (called pedagogy), Knowles (1990) points out that whereas dependent personality characterizes learners' self concept in pedagogy, self-direction characterizes the self-concept of adult learners in adult learning process. It is clear that this refers to personal characteristics of adult learner, or, as Brockett & Hiemstra (1991) call, this refers to *factors internal to the individual* (e.g. level of self-directedness of the learners). Therefore, in PRO model, learner self-direction "refers to characteristics of an individual that *predispose* on toward taking primary responsibility for personal learning endeavors" (Brockett & Hiemstra, 1991, p. 29).

The fourth concept of the PRO model is *self-direction in learning*. According to the pioneers of this model, self-direction is the vital link between self-directed learning

and learner self-direction. They point out that "self-direction in learning is term that we use as an umbrella concept to recognize both external factors that facilitate the learner taking primary responsibility for planning, implementing, and evaluating learning, and internal factors or personality characteristics that predispose one toward accepting responsibility for one's thoughts and actions as a learner" (Brockett & Hiemstra, 1991, p. 29).

Whereas the PRO model shows distinctions between internal (learner self-direction) and external factors (self-directed learning), it also shows strong connection between these two factors. To understand the success of self-direction in a given learning context, this connection is vital (Brockett & Hiemstra, 1991). The PRO model views both internal and external factors of self-direction as a continuum. Therefore, "a given learning situation will fit somewhere within a range relative to opportunity for self-directed learning and, similarly, an individual's level of self-directedness will fall somewhere within a range of possible levels" (ibid., p. 30). Having said that, theoretical proposition of the PRO model is suggested by Brockett & Hiemstra (1991, p. 30):

> "...optimal conditions for learning result when there is a balance, or congruence, between the learner's level of self-direction and the extent to which opportunity for self-directed learning is possible in a given situation. If, for example, one is predisposed toward a high level of self-directedness and is engaged in a learning experience where self-direction is actively facilitated, chances for success are high. Similarly, the learner who is not as in self-directedness is likely to find comfort and, in all likelihood, a greater chance of success in a situation where the instructor

assumes a more directive role. In both instances, the chances for success are relatively high, since the learner's expectations are congruent with the conditions of the learning situation."

According to this model the balance between internal characteristics of the learner and external characteristics of the learning-teaching transaction should be in harmony; otherwise, difficulties and frustration arise. This may also affect success in the learning process (Brockett & Hiemstra, 1991).

The last concept of the PRO model is *the social context.* Social context can be defined as a context in which learning takes place. Context refers to a variety of settings in which learning exists, and it is examined under two headings: institutional context and the global context (Brockett & Hiemstra, 1991). Whereas institutional context may include settings from formal education and training institutes (e.g., college, universities, occupational training settings, etc.) to informal institutes (e.g., museums, libraries, web environment, etc.), the global context refers to culture in which learning takes place (Brockett & Hiemstra, 1991).

In the literature, there are few studies focusing on the PRO model. Flannery (1993) reviewed Brockett & Hiemstra's (1991) study and said that although that study contributed to the field of education and adult learning area, larger influences of the society on learning was effectively ignored by the authors. She also added that sociological and cultural issues were not significantly resolved in that study (Flannery, 1993). Similar criticism was also done by Song & Hill (2007). They said that the definition of context of PRO model was a little bit limited in today's educational climate. They indicated that different physical institutions (such as community colleges, libraries,

and museums) had been defined as social context in PRO model, however, "in today's educational situation, where virtual learning continues to experience exponential growth, a focus only on face-to-face settings is rather limited" (Song & Hill, 2007, p. 29). But, it can be said that their critic is not much more correct. When we look at PRO model, Brockett & Hiemstra identify social context as any context in which learning takes place. They also say that "the social context provides the arena in which the activity of self-direction is played out" (Brockett & Hiemstra, 1991, p. 33). It is understood that the context concept of PRO model refers to a variety of setting from formal education and training institutes to informal institutes, and it refers not only face-to-face settings but also every setting in which learning takes place. Therefore, saying that the concept definition of PRO model focuses only on face-to-face settings may be misleading. The other criticism of the PRO model is that the psychological dimension of learning is not taken into account efficiently (Fogerson, 2005).

2.5.4. Critics on SDL studies and theoretical approaches

Many of the criticisms encountered in the literature are generally on the early theoretical approaches and study of the SDL. The first of these criticisms is that there is lack of common definitions of SDL or there is misconception of it (Bartlett, 1999; Kerka, 1999). According to this criticism, because of this lack of a common and comprehensive definition, a well respected theory and theoretical base study has not emerged in the adult learning field (Bartlett, 1999).

The other criticism is about traditional SDL approaches that see SDL as a process of self-instruction in which scholars just focus on learners' capability to execute the steps of the learning. This criticism indicates that all of the learning process cannot be

explained only by process of instruction; instead, "the personality characteristics of individuals whose learning behavior is characterized by initiative and persistence in learning over time through a variety of learning modes, such as the modes of inquiry, instruction, and performance" should be taken into account (Oddi, 1986, p. 98).

Some other criticisms against the SDL approaches are raised by authors who are advocates of critical orientation of adult learning (e.g., S. Brookfield, 1985, 1993; Candy, 1991; Hammond & Collins, 1991). According to them, in SDL research and studies, social construction and context in which learning takes place, cultural contingency, and political context have been mostly ignored. Related to this issue, Brookfield (1993, p. 228) emphasizes that "the predominance of the concept of self-directed learning illustrates the tendency of humanistic adult educators to collapse all political questions into a narrowly reductionist technical rationality." In terms of social context, calling attention to the criticisms about this issue, Brockett & Hiemstra (1991) says that although the central point of the idea of SDL is the individual learner, self-directed learning activities "cannot be divorced from the social context in which they occur" (p. 32). Finally, there are also some criticisms about research on self-directed learning. These criticisms focus on "...overuse of educated, middle-class Caucasian populations, *and*...overuse of quantitative research methodologies" (Owen, 2002, p. 34;see also Brookfield, 1995)

Because most of these criticisms were made in 1980s and at the beginning of 1990s, today some of them are not valid. For example, opposite of the criticisms, today SDL related research and theoretical approaches accept importance of personal characteristics in SDL learning environment and effect of learning context (Brockett &

Hiemstra, 1991; Merriam et al., 2007). However, still there is a lack of theory driven research, cultural contingency and political context are widely ignored, and generally studies are conducted in university, college or education settings through quantitative research methods.

2.5.4. Measurement of Self-Directedness

Most of the theoretical approaches and models of SDL talk about self-direction of adult learners or their ability to being self-directed (e.g., Brockett & Hiemstra, 1991; S. Brookfield, 1985, 1986; Garrison, 1997; Knowles, 1975, 1990; Long & Agyekum, 1983; Merriam et al., 2007; Mezirow, 1985, 1991; O'Shea, 2003; Owen, 2002). Although it is generally accepted that self-direction is very important in learning process, and educators are encouraged to take into account adult learners' self-directedness when they plan their learning programs, there is a challenging "to distinguish between those adults who possess the characteristics often believed to be associated with self-direction in learning and those adults who fail to reveal such attributes" (Long & Agyekum, 1983, p. 77). There are two instruments widely used in empirical studies to assess the self-directedness of adults: Self-Directed Learning Readiness Scale (SDLRS) and the Oddi Continuing Learning Inventory (OCLI).

SDLRS, which is a 58-item likert scale, was developed by Lucy Guglielmino in 1977. She developed this scale to measure learners' readiness for SDL. In order to construct the scale, Guglielmino used a 3-round Delphi Technique. Then, she applied the instrument on a sample with 307 people. She reported reliability of the instrument as .87 (Cronbach's alpha). Range of SDLRS score is between 58 and 290; whereas 290 refer to highest level of readiness, 58 refers to the lowest level of readiness for self-directed

learning. Finally, although SDLRS is the most frequently used instrument in quantitative researches, some studies indicate that there remains too many questions related to validity of the scale (Brockett & Hiemstra, 1991) and it needs more validation (Long & Agyekum, 1983). Some other studies also cast doubt on validity and reliability of SDLRS and indicate their concern about *cost* of this instrument as well (Candy, 1991; Fisher et al., 2001; O'Shea, 2003).[15]

The other instrument widely used in SDL related research is OCLI, which is a 24-item instrument. It can be seen as an alternative measure of self-direction in learning (Fitzgerald, 2003). It was developed by Lorys F. Oddi, who was a nurse educator and was particularly interested in continuing professional education in 1986 (Oddi, 1986).[16] OCLI helps researchers to assess aspects of self-directedness as a personality trait (Merriam et al., 2007). After identifying the personality characteristics of self-directed continuing learners, to be able to identify such learners, ODDI developed this instrument, and conducted an empirical study to validate it (Oddi, 1986). She applied this instrument to a sample of 271 graduate students to measure their self-directedness as a personal trait. Her results showed that internal consistency of the instrument was .87 and its test-retest reliability was .89. She also checked the estimated construct validity of the instrument through correlations of scores with measures of self-confidence, adult intelligence, educational participation, affiliation, and endurance. She concluded that OCLI instrument was a valid tool for identifying self-directed continuing learners. Total scores of OCLI

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[15] This instrument is costly because it takes long time to complete and the researchers have to pay money for each subject in their sample to the pioneer of this instrument.

[16] Actually, this instrument was developed in a dissertation study of Lorys Oddi in 1984, it was published in 1986.

range from 24 (least characteristics of self-directed continuing learners) to 168 (most characteristics) (Chou & Chen, 2008; Harvey, Rothman, & Frecker, 2006).

OCLI includes three domains established by Oddi (1986) through literature review and then factor analysis: 1) Proactive Drive vs. Reactive Drive (PD/RD) referring to capability to start and continue in learning without any external reinforcement, and corresponding to internal learning characteristics (e.g. motivation, self-esteem, confidence, engagement, autonomy, and persistence); 2) Cognitive Openness vs. Defensiveness (CO/D) referring to openness to change which is an essential attribute of the SDL (e.g., curiosity, openness to new idea and activities, ability to adapt to change, and willingness to take risks); 3) Commitment to Learning versus Apathy or Aversion to Learning (CL/AAL) "include[ing] the expression of positive attitudes toward engaging in learning activities of varying sorts and a preference for more thought-provoking leisure pursuits" (Oddi, 1986, p. 99).

Literature showed that the ability of self-direction or self-directed continuing learning measured by the ODDI's instrument had relationship with such variables as: problem based learning, gender, age, mode of continuous learning, perception of professional autonomy, level of education, self-efficacy, self concept, self-care, self-learning, personal responsibility, readiness for self-directed learning, learning climate, learning activity, job performance, on-the-job learning, participation in educational activities, grades, personality, and intellectual development (as cited in Owen, 2002). In addition, Landers (1989) indicated that SDLRS and OCLI are very similar; this claim was also supported by Harvey and his colleagues in 2003; they found that SDLRS and OCLI had correlation of .713 (Harvey, Rothman, & Frecker, 2003).

Finally, in addition to the Oddi's study in 1986, validity and reliability of the OCLI instrument was tested and approved by the later studies. In terms of reliability, Six (1987) found Cronbach coefficient alphas of .77, Landers (1989) also found .77, and recently, Barlett (1999) found overall reliability of .756. In terms of validity, in 1990, while study of Oddi and her colleagues showed a reliability of .90, they also supported construct validity of the instrument (Oddi, Ellis, & Roberson, 1990; see also Harvey et al., 2003 for reliability and validity of OCLI).

2.5.5. Self-directed Learning and Online Distance Learning

As mentioned, through offering high independency, greater productivity, and new experiences online learning provides opportunity to the learners to control their learning process (King, 1998). On the other side, SDL is generally defined as a process in which learners have autonomy and independency, they take the initiative of learning, and they are responsible for their learning (Knowles, 1975, p. 18; see also Brockett & Hiemstra, 1991; and Candy 1991). The process approach of SDL is completely consistent with description and definition of the online learning because online learning gives the control of the learning mostly to the learners (Song & Hill, 2007, p. 30). Therefore, some of the scholars define internet as one of the most powerful and important SDL tools and online learning as an important SDL process (Gray, 1999; Imel, 2003; Kerka, 1999).

Although the relationship between SDL and online learning is clear, there are only a few studies focusing on online learning and SDL together (e.g., Corbeil, 2003; Doherty, 2000; Ibrahim & Silong, 2000; Johnson, 2005; Pachnowski & Jurczyk, 2000). In terms of theory, it is difficult to say that there is a comprehensive theoretical approach that explains self-directed learning and online learning together. However, early

theoretical approaches and models looking at self-directed learning as a process and as a personal attribute (e.g., PRO model) can help to understand online learning process, environment, and outcome of it.

2.5.6. Research on Self-directed Learning

Here, some selected studies are examined under two categories: general research related to SDL, and research related to both online/distance learning and SDL. This review will be done through a chronological order.

2.5.6.1. General research related to self-directed learning

In one of the early studies on SDL, Savoie (1979) investigated predictors of success in continuing nursing education courses. The feature of these courses was that at least two of the three teaching learning process require participants to be self-directed. Her sample was comprised of 152 nurses who enrolled one of those continuing education courses. As predictor variables, Savoie used the personal, educational, and employment characteristics of her sample, their motivation, their prior experience in any SDL environment, and their SDL readiness level. While she measured success through grade of each participant, she measured degree of self-directed learning readiness by SDLRS. Her results showed that there is a positive significant relationship between readiness to SDL and course grades. She also found relationship between employment status of the participants and their course grades in favor of those who were employee in nursing at the time of the research.

Harriman (1990) aimed to determine the level of readiness of community college telecourse program for self-directed learning and to understand its relationship with course achievement, completion and other variables (such as, age, gender, marital status,

family status, education, occupational level, enrollment status). To measure readiness level for SDL, the author applied SDLRS to a sample of 170 students of community college telecourse program. His results showed that success in this telecourse program was related to SDLR of the students. Moreover, success was also related to students' age, education level, and family status. Age was also related to SDLR. In terms of gender, the study showed that whereas successful males had higher SDLRS score comparing the unsuccessful males, there was no significant differences between unsuccessful and successful females (Harriman, 1990).

In 1994, Dieber conducted a research to figure out if a problem-based learning (PBL) experience in medical college has any influence on SDL characteristics of medical students. Sample frame of this study was comprised of 216 medical students selected through a non-random purposive sampling; 115 of them were in their first year of study, and 101 of them were in their fourth year of study during the 1993 and 1994 academic year at Wake Forest University. However, response rate was 37.5% (N=81) suggesting a risk of lower accuracy of results. In order to measure level of self-directedness, Dieber (1994) utilized OCLI. Her findings revealed that problem based learning significantly increase the level of SDL of the students. She also examined the relationship between level self-directed continuing learning ability and gender, year of study in medical school, parental educational levels and age. According to her findings gender was related to self-directedness; females had significant higher self-directedness level then males.

In 1995, Morris examined the relationship between academic achievement and readiness for SDL among nontraditional graduate students of business institute. This study also targeted to figure out the relationship between SDLR and participants'

postsecondary education experience, time since enrollment in the master program, gender, ethnicity, and age. Sample of this study was comprised of 157 randomly selected students. Academic achievement was measured by Graduate Management Admission Test (GMAT) scores, and readiness for SDL was measured by SDLRS. Results showed that there was a positive relationship between SDLR and academic achievement, and overall graduate grades were also positively associated with SDLRS scores. There were also association with age and sex of participants and their SDLRS scores; whereas women's score was higher than men, the elders have higher SDLRS scores too[17] (Morris, 1995).

Durr and his colleagues (1996) examined the relationship between various characteristics of adults and their readiness for SDL. Especially, they were interested in relationship of various occupational types with SDLR. This study was conducted with employees of Motorola, and to measure readiness for SDL, the SDLRS was used. The sample of this research was comprised of 607 managers and non-managers selected through a combination of cluster sampling and random sampling. Researchers identified nine occupational categories (Manufacturing, clerical, engineer, sales, support professional, manufacturing manager, support manager, engineering manager, and sales manager), and their results showed that in terms of level of readiness for SDL, there were significant differences among the mean SDLRS of those occupational categories. In addition, this study showed that SDLRS score of managers were significantly higher than non-mangers' (Durr et al., 1996).

[17] That is findings of this study demonstrated a positive relationship between SDLRS scores and age.

In 1996, Garver investigated relationship between individuals' self-directedness level and their performance in their work environments. In terms of work environments, this study used five police departments in Dauphin County of Pennsylvania. The sample of the study included 105 non-supervisory patrol officers drawn purposively from those police departments. The self-directedness level of the officers were determined by three instruments; SDLRS, OCLI, and Jude-York's Learning Activities Survey. Jude-York's Learning Climate Survey[18] was also used to determine officers learning climate[19]. Results revealed that there were significant positive relationships between performance of police officers in their work environment[20] and their level of self-directedness. But, this research could not find relationship between learning climate and SDL (Garver, 1996).

Kell and Van Deursen (2000) conducted a longitudinal research to evaluate the influence of a physiotherapy degree program on students' learning profile[21] and their readiness for SDL. They also aimed to examine if students' maturation had an effect on SDL. SDLRS, Learning Preference Inventory (LPI),[22] and a demographic survey were applied to the sample of the study. Sample of this study comprised of 43-student cohort

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[18] This survey "measures support given to employees for growth and development such as financial reimbursement, acknowledgment on performance evaluations, time away from work, recognition, rewards and coaching from their supervisors" (Garver, 1996, p. 64).

[19] The learning climate refers to "the climate within an organization which supports, hiders, or neutralizes learning efforts by value structures, formal or informal goal structures, norms, roles, power/authority hierarchies, sanctions and rewards" (Garver, 1996, p. 13)

[20] Performance of the police officers was "measured by their scores on a performance assessment completed by a combination of management level supervisors and immediate supervisors collectively referred to as the 'Team.' Each team reviewed the performance of all responding members from their respective police departments" (Garver, 1996, p. 71)

[21] Learning profile refers to learning preference. In this study six dimensions of the learning preference were identified and measured: Abstract learner, Concrete learner, student structured, teacher structured, individual learner, interpersonal learner.

[22] LPI is a self-report instrument comprised of 6 scales measuring six learning preference mentioned above. Each scale includes 15 items ranked from 1 to 6 and yields a score from 15 to 90. For each scale, a higher score indicated greater consistency with that learning preference.

on the 1994 BSc Physiotherapy degree course at the Physiotherapy Education department in Cardiff, UK. The questionnaire package was applied five times during the three-year course, and one time six week after the completion of the course. Results of the study showed that mature students were more ready than school-leavers, and this continued throughout the three years and 6 months.[23]

In 2000, Haggerty conducted a research to understand whether teaching adults self-directed learning[24] and make them to participate SDL activities can increase SDL abilities of adults and affect their preference for learning through self-direction (Haggerty, 2000). She also wanted to test one of the assumptions of andragogy theory: adult learners are self directed. A pretest-posttest design was applied to the sample of 43 southern Louisiana community college students selected through a convenience sampling and who enrolled in the same biology lab course. In order to measure initial and later preferences for self-directed learning, the Inventory of Learning Styles for Higher Education was implemented. At the end of the research, Haggerty could not find any significant difference between pre and posttest results; that is, students tented to show preference for teacher directed learning style in both tests.[25] However, whereas 6 percent of the subjects preferred SDL style initially, 33 percent of the subjects preferred SDL at the posttest. Her results also showed that there was a positive relationship between self-directed learning and academic achievement. This study revealed that majority of the

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[23] In this study the cohort was divided into two groups according to age of the participants: students under 21 years old constituted the school-leavers group, students over 21 constituted the mature group.

[24] In the literature, it is indicated that self-directedness can be learned and taught (Brockett & Hiemstra, 1991; Grow, 1991). To facilitate and teach SDL, there are a number of recommendations (we also discuss some of them in the implication part of this dissertation). In Haggerty's (2000) study, similar methods were also used to teach SDL to the participants.

[25] It is clear that pretest posttest research design suffer from a number of validity threats explained in the methodology part of this dissertation.

adult learners prefer to be teacher-directed; this finding did not support the andragogical assumption (Haggerty, 2000, p. 108).

In a recent study, Stewart (2007) examined the relationship between international students' readiness for self-directed learning and their learning outcomes. He proposed that "international students who have higher readiness for SDL gain greater learning outcomes from project based learning (PBL) approaches" (p. 453). To achieve this research, Stewart conducted a survey to a sample of 26 students completing an engineering management course. His results showed that in achieving learning outcomes from PBL, readiness for SDL was a key enabler.

To sum up, most of the studies examined above focused on the relationship between readiness to SDL or self-directedness of the learners and their achievement or success in the learning environments. Their results generally showed that there was a positive relationship between self-directedness and success (Haggerty, 2000; Harriman, 1990; Morris, 1995; Savoie, 1979; Stewart, 2007). Some studies also sought to understand the predictors of self-directedness; according to their findings, teaching SDL, some types of teaching-learning methods (e.g., PBL), occupational categories, age, and gender are some of those predictors (Dieber, 1994; Durr et al., 1996; Haggerty, 2000).

2.5.6.2. Researches related to both online and self-directed learning

There are a few studies focusing on the relationship between self-directed learning and online learning. In 2000, Pachnowski & Jurczyk attempted to identify student related factors that were indicators of success in online distance learning courses. To achieve this, the researchers sent a survey accompanied by SDLRS to all students (approximately 100) registered for web-based distance course in a large, Mid-Western

University. The limitation of this research is that only 17 students returned the completed instruments and researchers got data on 39 web-based students. To measure success, students' final course grades were used. According to results of this study, self-directedness is not a good indictor or success in online learning environment. Technical skills, students' habits, and attitudes are, on the other hand, seemed related to success in online learning environment (Pachnowski & Jurczyk, 2000).

In another online learning and SDL related study, Ibrahim & Silong (2000) examined the barriers of participation to SDL activities through a qualitative research method. This research was conducted in the environment of the first virtual university of Malaysia, Universiti Tun Abdul Razak (UNITAR), which provided SDL environment for non-traditional adult students. The qualitative data of this study was collected through a purposive sampling and semi-structured interviews.[26] Results of this study revealed that "students faced several barriers to being self-directed in carrying out their learning in a virtual environment" (p. 9): institutional, dispositional, and situational barriers. Institutional barriers erected by institution itself, such as technological problems in the virtual learning environment, problems related to delivery of lectures, unattractive courseware, lack of computer at the learning centers, and inefficient student support services. Dispositional barriers refer to individuals' attitude about learning and their perceptions as learners. In this study researchers identified age (being old) and inhabitation as dispositional barriers in self-directed virtual environment. Situational

[26] It should be noted that qualitative studies suffer from generalizability of the results. That is, one of the most important weaknesses of qualitative research is that it allows no or limited generalization to the population (Boxill, Chambers, & Wint, 1997).

barriers are related to learners' situation in life at a given time. This study showed two important situational barriers: lack of finance and work commitment of the students.

In 2000, Doherty attempted to answer this question: "whether a student's readiness to be a self-directed learner is a predictor of student success in an online community college curriculum". To measure readiness for self-directed learning, the author sent SDLRS to 258 of the community college students enrolled in one or more online courses in the state of Washington in 1999 and who wanted to participate in this study. Because of this, sampling strategy was convenience sampling. Response rate was 147 (% 57).[27] Success of the students was measured by course completion, GPA, and student's satisfaction. The results of this study failed to show any significant relationship between readiness for SDL and academic performance (Doherty, 2000).

In 2003, Corbeil conducted a research to observe and explain the relationship between online learning, readiness for SDL, and success of students and their satisfaction (Corbeil, 2003). Oddi Continuing Learning Inventory (OCLI) was used to measure students' readiness for online learning, and success was measured by final grade. The survey instrument was sent to all graduate students (n=191) who enrolled in one of six online courses offered by Master of Education in Educational Technology degree program at the University of Texas and Texas Southmost College. However, response rate was 98 (51%). Results showed that although there were positive significant relationships between readiness to self-directed learning and both student satisfaction and success in bivariate analysis (correlation), these relationships disappeared in multiple

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[27] However, this study had cautious generalizability to all community college students enrolling online courses because of non-random convenience sampling.

regression analysis holding constant only online technologies self-efficacy and locus of control.[28]

Finally, Johnson (2005) was interested in factors affecting completion of distance learning courses offered by south Florida community college for seven-year period from 1997 to 2004. In those courses, in addition to internet, telecourse, and live interactive television were used as distance learning methods. Analysis of this research was done through using both pre-existing data and newly collected data. For newly collected data, a total of 522 surveys were mailed randomly selected students in 2004. However, response rate was 114 (22%) which included 4 telecourse, 25 live interactive television, and 85 internet student. Students' readiness for self-directed learning was measure by SDLRS. Pre-existing data included information related to gender, ethnicity, age, degree-seeking status and completion of the program. Analysis of pre-existing data showed that there were significant positive relationship between completion of the program and both age and degree-seeking status. On the other side, analysis of newly collected data failed to show relationship between readiness for SDL and completion of the program (Johnson, 2005).

To sum up, some studies focusing on the relationship between self-directedness of learners and their success in learning environments showed that there was a positive relationship between these two concepts (Haggerty, 2000; Harriman, 1990; Morris, 1995; Savoie, 1979; Stewart, 2007); however, the limited number of studies focusing on the relationship between self-directedness of learners and their success in online learning

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[28] Whereas online technologies self-efficacy refers to people's self-efficacy beliefs about communication technologies (e.g., e-mail, internet, and computer), locus of control is a construct referring to individuals' beliefs about their control over life events (Corbeil, 2003).

environments as self-directed learning environments failed to show any relationship (Corbeil, 2003; Doherty, 2000; Pachnowski & Jurczyk, 2000).

CHAPTER 3

THE CONTEXT OF THE STUDY: TURKISH NATIONAL POLICE

3.1. HISTORY AND STRUCTURE OF TURKISH NATIONAL POLICE

The Turkish National Police (TNP) has more than a 150-year history. For the first time, an organization named "Police" emerged as an independent security organization in Istanbul on April 10th, 1845 (Cufali, 2007; Yaman, 1983). Today, this date is the accepted foundation anniversary of TNP and celebrated each year. Since this date, this security organization had developed consistently until 1907 as part of the Ottoman Empire (Aksu, 2008). In 1909, modeling the French and German police organizations, a General Directorate of Security, under "Zaptiye Nezareti"[29], was established (Gokcegoz, 1998). During the first years of the Turkish Republic, this structure of the police was protected. In 1930, the structure of the security organization was reorganized. In 1933, there were directorates of security in 30 cities of Turkey. Additionally, it should be noted that there were 13 women police officers working around the country in this period (Cufali, 2007). The first legislation related to duty and responsibility of Turkish police was passed in 1934, and a law related to security organization based upon European police organizations, was enacted in 1937 (ibid.). Today's Turkish police organization depends on this law.

According to this law, there would be a chief of police managing security activities in each city of Turkey and there would be a major who was responsible for the police department in each town of Turkey. This law also required rejuvenation of the police and centralization of the organization. Therefore, recruitment of officers older than

[29] This term was previous name of the Ministry Interior.

age 30 was banned. By 1950 the establishment of police organization in each city and town had been completed (Cufali, 2007). During the time period, because of sociological, economical and political changes and requirements, TNP was restructured and developed several times, and "because of the highly centralized management style of the new Turkish Republic, new police force has gradually turned into a highly centralized paramilitary police force and centralizations" (Sullivan, 2005; as cited in Boke, 2007, p. 12)

Today, there are three different organizations that are responsible for general security of the country; the Turkish National Police (or as it is called General Directorate of Security), Gendarmerie and Coastal Security (Boke, 2007; Goktepe, 2008). The duty areas of Coastal Security are only the borders in coastal areas and coastal waters. Gendarmerie, on the other hand, is responsible for the security of the rural parts of the country in which there is no municipal organization and nor police organization. The duty areas of Gendarmerie constitutes less than 10% of the population of the country (Boke, 2007). The Turkish National Police is responsible for the security of all cities and towns of Turkey in which there is any municipal structure. This duty area constitutes approximately 90% of the population of the country.

The organizational structure of the Turkish National Police was identified by the Law of the Security Organization enacted in 1937.[30] According to this legislation, maintaining order and security in the country is the responsibility of the TNP. There is a General Director of Security who is the responsible for all personnel, money, technical support, and operations of the police departments across the country (Goktepe, 2008).

[30] http://www.kom.gov.tr/dosyalar/Mevzuat/3201.pdf

The General Directory of Security (GDS) operates under the Ministry of Internal Affairs. The structure of the General Directory of Security is comprised of three types of sub-organizations. These are central organizations, provincial organizations, and abroad organizations.

The duties of central organizations are:

- controlling assignment process of the all personnel of TNP;
- providing plans and projects in order to struggle with crime and following implementations of these plans and projects;
- following activities and operations of units under the provincial organizations and recording them; providing training programs;
- in order to struggle with crime and criminals within and outside the country, participating in cooperative activities conducted by national and international organizations, and ensuring implications of the decisions and strategies identified by that associations;
- signing international agreements related to its duty area and ensuring implementation of these agreements;
- and controlling and following some security related activities and innovations expected by European Union (Goktepe, 2008).

There are 25 departments under the central organization of TNP. The General Director is the head of all of these departments and each department is commanded by a 1st degree police chief.

Provincial organizations are comprised of 81 Directorates of Provincial Police or City Police departments, 751 Police Directorates of Towns affiliated with Provinces, 22

Border Gates Police Directorates, 18 Free-zone Police stations, and 834 police stations in 81 cities (OSCE, 2009). As it is seen, each city has its own police department directed by a 1st degree police chief. City police departments are affiliated with the city governors. City police departments are responsible for protecting public order and security in their city. The structures of city police departments are similar to the structure of the central organization (Goktepe, 2008). That is, departments of the central organization are represented by units in city police departments. Each of these units is controlled and commanded by a 3rd or 4th degree chief of police.

There are approximately 207,000 police officers working in the TNP. There are also approximately 11,000 civilian personnel working for different duties in the TNP. The police ranks of the TNP range from line officers to 1st degree chief of police. Table 1 presents data on the population of the TNP according to gender and rank of the officers in September, 2009.

Table 1:[31] Population of the TNP According to the Rank and Gender of the Personnel

Rank	Female	Male	Total
1st Degree Chief of Police	43	1,067	1,110
2nd Degree Chief of Police	21	836	857
3rd Degree Chief of Police	6	896	902
4th Degree Chief of Police	12	2,011	2,023
Major	105	2,991	3,096
Captain	142	1,282	1,424
Lieutenant	133	2,488	2,621
Sergeant	174	3,085	3,259
Line Officer	10,697	180,674	191,371
Total	**11,333**	**195,330**	**206,663**
Civil Personnel	2,720	8,721	11,441
General Total	**14,053**	**204,051**	**218,104**

[31] This table was provided depending on the records of General Directorate of Security Department of Personnel.

3.2. TRAINING OF TURKISH NATIONAL POLICE

The value of training is well known by the TNP. Especially after the foundation of the Turkish Republic, training of police has gained importance. At the end of the 1920s and beginning of the 1930s, in order for training of police some experts were invited from some European countries (especially from Germany and Austria). Additionally, some Turkish police officers were sent to those countries for training (Cufali, 2007). In the 1920s, three police schools were opened in Istanbul, Konya, and Trabzon; however, due to economic problems, the Konya and Trabzon police schools were closed in 1931. In 1937, copying the Lozan Police Institute and the Vienna police, a police institute was founded. Later, this institute was changed into a four-year police academy. In addition to the police institute, after the 1950s police schools were founded in some cities of Turkey. Specifically, since the 1980s, the training of both new recruits and veteran officers has increased its importance because of developing technologies, changing world, increasing crime, and terrorism. Today, the training system of the Turkish National Police is comprised of two main parts: pre-service training and in-service training. Both types of training are under the effect of centralized structure of TNP.

3.2.1. Pre-service Training in the TNP

This type of training can be defined as the training of officers before the job. There are three major pre-service training programs in the TNP. These are Police High School, Police Academy, and Police Schools.

The Police High School was first founded in 1938. Today there are two police high schools in Turkey, the Ankara and Bursa police high schools. The aim of police high

schools is to prepare cadets for the police academy. Police high schools are a four-year boarding school and all students have to be in uniform (Gurcan, 2005). The curriculum is mostly dominated by lessons related to science, literature and mathematics. In addition, there are also lessons related to police occupation and discipline (Gokcegoz, 1998). The educational expenses of all students in police high schools are covered by the Turkish National Police. Since 1938, a total of 9255 students have graduated from police high schools.[32]

The Police Academy was first founded as a one-year police institute in 1937. In 1962, it was changed into a three-year police institute, and in 1980, it was changed into a four-year faculty. Today, this four-year faculty is also called the Faculty of Security Sciences (Gurcan, 2005). The aim of the Police Academy Faculty and Security Sciences (PAFSS) is to train the supervisors of the Turkish National Police. The students of PAFSS are mostly comprised of graduates of the police high schools; however, each year a small numbers of students from other public and private high schools enter the police academy after passing the entrance exam. In addition, PAFSS also accepts international students from different countries. As of 2009, there are international students from 13 different countries (Albania, Azerbaijan, Bosnia Herzegovina, Georgia, Palestine, Turkish Republic of Northern Cyprus, Mongolia, Moldavia, Kyrgyzstan, Turkmenistan, Macedonian, Republic of Belarus, and Jordan) trained by Police Academy Faculty and Security Sciences.[33] Cadets of this school are exposed to high level of law education and also occupational training. Once Turkish students graduate from the Police Academy

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[32] http://www.polislik.net/index.php?Itemid=251&id=872&option=com_content&task=view

[33] http://www.pa.edu.tr/index.php?pid=83

Faculty and Security Sciences, they are assigned as sergeants to different units of the TNP, and international students go back their countries after graduation.

Police schools (PS) were first established in 1945. These schools offer a two-year higher education for their students and are similar to junior colleges in the U.S. There are 22 police schools across Turkey.[34] The aim of these schools is to train the line officers of the Turkish National Police. Like the Police High Schools and Police Academy, police schools are also boarding schools and all student expenses are covered by the TNP. Recently, some Police Vocational Training Centers (PVTCs) have been opened. These training centers have the same goal as the police schools, but their cadets have to have bachelor degree from any university and they are trained just for 6 months. Each year approximately 10,000 police officers graduate from police schools and PVTC. Table 2 presents number of the officers graduating from police schools (PS) and PVTC between 2005 and 2009.

Table 2: [35] The Number of the Officers Graduating from Police Schools (PS) and PVTC between 2005 and 2009

2005		**2006**		**2007**		**2008**		**2009**	
PS	PVTC	PS	PVTC	PS	PVTC	PS	PVTC	PS	PVTC
6,213	1,848	6,367	5,202	6,938	4,324	6,343	4,120	6,407	4,195
8,061		11,569		11,262		10,463		10,602	

3.2.2. In-service Training in TNP

In the TNP, in-service training is recognized as a very important element that is done to improve the productivity of officers, to increase ability and information of officers, and to make officers ready for any new situations and duties. As it is mentioned previously, because of increasing, shifting, developing crime, criminals, and terror

[34] http://www.egm.gov.tr/birim.egkur.asp

[35] This table was provided depending on the records of General Directorate of Security Department of Personnel.

activities, training of the police has become more important. To train its personnel, the Turkish National Police organized many in-service training programs. All expenses of in-service training programs offered to officers around the country are covered by the Turkish National Police. Most of the in-service training activities in the Turkish National Police are planned and coordinated by a department under the central organization of the TNP, the General Directorate of Security Department of Training (Gokcegoz, 1998; Gurcan, 2005). In addition, some training activities may be also coordinated by provincial organizations.

Depending on training needs and training policies of the Turkish National Police, the General Directorate of Security Department of Training is responsible for planning and coordinating training programs and following their implementation (Gurcan, 2005). In-service training activities planned and coordinated by the Department of Training are presented in Table 3:[36]

Table 3: Types of In-service Training Programs Applied in the TNP

Types of Training Activities	**Main Features and Aim of the Program**
Basic Training	These training programs are generally designed to train new recruits on general policing issues after their graduation.
Middle Class Chief Training Course	Training of ranked officers (especially middle class managers) required by the Turkish National Police is the responsibility of the Police Academy. However, sometimes these requirements increase, and some officers are selected and assigned as ranked officers after the Middle Class Chief Training Course.

[36] This table was provided depending on Gokcegoz (1998), Gurcan (2005) and records of General Directorate of Security Department of Training.

Table 3: (continued)

Types of Training Activities	Main Features and Aim of the Program
Professional Expertise Course	These training programs are applied to personnel who are studying in a department and with a branch, or personnel expected to be assigned into a specific branch. The aim of this program is to improve the ability of officers in a specific branch. These types of courses generally include these topics: Community Oriented Policing, VIP, escort, Interpol, PC, photography, administration, fingerprint, passport, intelligence, archives, and statistic.
Practical Training	This type of training is provided by commanders to their personnel when they are working.
Shooting Training	The aim of this type of training is to increase the shooting abilities of officers.
Training in Abroad	In order to learn innovations applied by other countries or to learn different countries' police training systems, some personnel are selected and assigned abroad. These trainings include short time courses, master and PhD programs.
Foreign Language Courses	To learn the information emerging in different countries, and to serve the tourist, foreign language courses are organized.
Training the Trainer	TNP every time needs trainers to train its personnel; Therefore, this courses aim to train the trainers of the TNP.
Operational Training	This type of training is organized to train personnel for some operational duties such as hostage rescue, terror and narcotic operations.

In addition to the General Directorate of Security Department of Training, some other departments under General Directorate also have training units for their personnel across the country. These departments also offer training programs through cooperation

with the Department of Training. One of these training units is the SASEM (Crime Search and Investigation Training Unit). This training unit is under the General Directorate of Security Department of Public Order. Some of the training programs offered by this training unit are:[37]

- Community Oriented Policing basic and following training programs
- Crime Scene Investigation courses
- Human Trafficking and Sexual Crime Training
- Crime Victimization training program
- Motorized police basic training program
- Police defense tactics training program
- Child Policing Training program
- Auto theft training program
- Struggling with violence against women

The other unit offered by a central department other than the Department of Training is the TADOC (Turkish International Academy against Drugs and Organized Crime). This training unit is working under the General Directorate of Security Department of Anti Smuggling and Organized Crime. This unit offers training programs related to struggling with Drugs and Organized crime not only for personnel working in units related to this issue in Turkey, but also for the police from other countries.[38] The last unit is the Police Training Center for Traffic. In this training center, officers who are

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37 http://www.asayis.pol.tr/sasemdefault.asp

38 http://www.tadoc.gov.tr/turkce/index.htm

assigned to traffic units are trained. This unit depends on the Department of Traffic Training and Research.

3.3. USE OF TRAINING TECHNOLOGIES AND ONLINE LEARNING IN THE TNP

As mentioned before, all technological innovations that can be used in training and during the delivery process of training can be seen as training technologies. For example, microphone, speaker, projector, overhead projector, computer, software (e.g. Power Point), video player, CD/DVD player, television, radio, some video-conferencing systems, other media technologies, printed resources, internet, network systems, satellite, etc. have the greatest potential for teaching, training, and learning (Bates, 2005; Galusha, 1997), and they can be used in training and development training process effectively. Therefore, all of these technological innovations can be accepted as training technologies.

The Turkish National Police have long been using a number of these training technologies. For example, during the traditional face-to-face training processes, it is commonly seen that trainers of the TNP benefits from projectors, CD/DVD players, video players, computers, some software etc. to facilitate the learning of their trainees. Moreover, especially since the end of the 1990s the TNP has been interested in internet and network systems to train its personnel and establish secure communication among them.

In 2000, TNP initiated the PolNet project. PolNet can be defined as a secure network system that provides the opportunity for police departments and their personnel to communicate, to share information fast and securely throughout the country. It is

similar to the LEO (Law Enforcement Online) in the U.S.[39] PolNet is connected with all the police departments and the headquarters in the country. Although it is not commonly used for training purposes, it is used for on-job training activities within the TNP.

The other initiative for police training through the use of internet/network technologies was conducted by the Intelligence Department (ID) of the TNP in 2000. Actually each year, the Intelligence department organizes a Basic Intelligence course for its new and veteran personnel. The aim of the Basic Intelligence Course is to train the members of ID with new information about terror organizations, intelligence techniques, and new policies related to the ways of collecting information. This course is organized in Ankara, the capital city of Turkey, and all attendees of the course have to come there. During the course, transportation, accommodation costs, meals, and daily wages of the attendance are paid by the ID. In 2000, to facilitate the presentation of this training program and shorten its time, the ID initiated an online training program through its secure network system. However, this training program was cancelled because it was believed ineffective.

One of the most important initiatives, in terms of use of internet/network technologies in police training in Turkey, is *Akilli Sinif (Smart Class)* project.[40] In 2004, the General Directorate of Security Training Department started activities related to distance training of police through online learning. The first step of these activities was signing a three-year cooperation agreement with the Middle East Technical University (METU) in 2005. At the same year, a smart class was opened. The first online training

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[39] http://www.leo.gov/

[40] http://www.egm.gov.tr/egitim/index-7.html

through smart class was started with the two-week training program for the ranked officers promoted from captain to major rank in 2006.

The Smart Class is a training system offering online distance training through the help of the internet, computer and some other training technologies. It is in Ankara and the General Directorate of Security Training Department is responsible for it and its activities. In terms of traditional training, 20 trainees can be trained in the smart class. The smart class provides an opportunity both for synchronous and asynchronous online learning. That is, whereas trainees follow the lessons simultaneously, they can also follow it whenever they want because video and voice records of lessons are published on the website of the smart class. In addition, trainees can find other online resources provided by instructors to facilitate and increase learning levels in the website of the smart class.

In the smart class, there is one video conference device which provides an opportunity to establish video connections with other distant places, classes, and people. The lessons are presented on the website, http://egitim.egm.gov.tr/ . Each participant can enter the portal through a user name and a passport. While the distance participants are watching the lessons, they can also ask questions through e-mail. Recorded lessons and other resources related to lessons are published on this website and participants who missed the lessons or want to watch them again can watch them and read or use the materials. Participants can also find some helpful links and materials to facilitate their learning in this website if they are provided by the instructors. The training programs offered by the smart class are:

- Management Training for High and Middle Level Ranked Officers

- Basic Training Program for the Juvenile Police
- Basic Training Program for Motorized Policing
- Community Oriented Policing Basic Training Program
- Investigation Course for White Color Crimes
- Interview and Taking Statement Course

The smart class provides great flexibility for the trainees to learn training materials whenever and wherever they want. In addition, the smart class also provides cost advantages for the Turkish National Police. According to the General Directorate of Security Department of Training, from 2006 to 2009, 22,916 officers were trained online via smart class. The TNP invested 1,156,000 TL ($770,667) for the smart class project. When food, accommodation, and travel cost of each officers' is taken into account, this project provided 7,780,000 TL. ($ 5,186,667) cost advantages for the TNP. [41]

3.4. COMMUNITY ORIENTED POLICING IN THE TURKISH NATIONAL POLICE

In Turkey, because of economical, social, and other reasons, crime rates have increased significantly. In addition, domestic immigration, increasing population, heterogeneity, and change in shape of crime from individuality to organized have made struggling with crime difficult through traditional policing perspectives (Aksu, 2008). This process has forced the police to find new ways to struggle with crime and criminal activities. The necessity of change in policing approaches was stated clearly in a circular published in 2003 with these words:

[41] *$1 is* equal to approximately 1.5 TL.

> "It is not possible to solve the crime and all matters related crime in the traditional policing approach. It is necessary in investigating economical, social, psychological and biological reasons of crime, proposing some solutions and reducing opportunities of crime. To realize these in administration of police preventive, multi institutional, victim focused and analytical approach must be set up" (as cited in Kabukcu, 2006, p. 72).

The other reason making necessary changes in policing is the European Union (EU). Turkey has made significant efforts to be able to join the EU for approximately 30 years. On 10-11 December, 1999, in the Helsinki Meeting in which presidents of the EU countries attended, Turkey was accepted as a candidate country for EU (Aksu, 2008). After this time, Turkey entered a new process in which it started to restructure itself in all areas of social, economical, and political life. As one of the most important public organizations of Turkey, the police also entered this restructuring process. In this process, police development was accepted as a key target; training, personnel, and operation of the police was revised, a number of projects in different policing areas were planned and have been started to be implemented (Aksu, 2008; Gokkaya & Dogan, 2007). One of these projects is the "Twining Project", which has been coordinated cooperatively by General Directorate of Security of Turkey and Spain since the beginning of 2005 in order to empower responsibility, productivity, and efficiency. Although it was first mentioned and recommended officially by the circular (mentioned above) in 2003, within this project, Community Oriented Policing was accepted as one of the basic changes to be able to struggle with increasing and changing crime and to be able to become an EU country (Gokkaya & Dogan, 2007).

In 2006, with a circular, a pilot project for COP was started in 10 cities and 20 police satiations in Turkey (Aksu, 2008; Gokkaya & Dogan, 2007; Kabukcu, 2006; TNP, 2009). During this pilot project, experts from the European Union examined the implementation of COP in Turkey and identified deficiencies. Two hundred personnel working in the Turkish National Police were trained on COP by foreign experts. In 2007, implementation of COP was also started in 15 additional cities. In 2008, the number of cities with COP units and applying COP increased to 51. Finally, in April, 2009, COP was also started in the remaining 30 cities (TNP, 2009).

Today, COP is applied in 81 cities of Turkey, and approximately 2,200 personnel are working in COP units (TNP, 2009). Implementation of the COP across the country is coordinated and controlled by the General Directorate of Security Department of Public Order. There is a committee comprised of 11 members to follow and assess the implementation of COP. There is also a central unit which is under the Department of Public Order and responsible for the implementation of COP, identifying problems, producing solutions for the problems, developing services and establishing coordination with municipal COP units. In each city, there is a COP unit which is directed by a major. This unit depends on a Deputy Chief of Police who is responsible for maintaining public order in the city. Officers working in COP units are assigned by City Directorate of Security and they are trained by the General Directorate of Security Department of Training. These officers also wear a special uniform.

Implementation of COP in Turkey is very similar to implementation of it in the U.S. and some EU countries. Some main activities related to implementation of COP in Turkey are analyzing crime and assigning foot patrol in neighborhoods, organizing peace

meetings with residents of the neighborhoods, identifying security rules in neighborhoods, visiting residents in neighborhoods, organizing programs for schools and students, conducting meetings with different job sectors, providing brochure and leaflets to inform citizens, applying surveys to citizens, strengthening the relationship between police and citizens, etc. (Kabukcu, 2006). The general principles of implementation COP in Turkey are (Gokkaya & Dogan, 2007; TNP, 2009):

- Being in the community and being open to communication with the citizens
- Providing active participation of the community into security services and crime prevention activities
- Diffusion of principles of COP into all areas of policing services
- Policing services should be directed and reorganized according to local needs and expectations of the community.
- Attempting to decrease fear of crime and insecurity in the community.

Some principles supporting implementation of COP in Turkey are (Gokkaya & Dogan, 2007; TNP, 2009):

- Establishing mechanisms facilitating communication and relationship between the police and the community
- Comprehensive approaches to solving community problems
- Establishing a dialog with people under risk; building up relationship with older people, women, children, addicts, tourists, etc.
- Development of COP units in terms of technology, information systems, and personnel.

In addition to these general and supportive principles, to facilitate and strengthen the implementation of COP, cooperation with citizens and some public/private sectors is necessary. In Turkey, COP units attempt to establish relationships and coordination with the other units of city police, police centers, public sectors, municipal organizations, education and training sectors (pre-schools, elementary schools, high schools, universities, etc.), health and social service sectors, private security organizations, non-governmental organizations, representatives of neighborhoods, streets, or apartments, families, etc. (Gokkaya & Dogan, 2007; TNP, 2009).

3.5. THE ONLINE COP BASIC TRAINING PROGRAM

As mentioned above, the implementation of COP in Turkey is under the control of the General Directorate of Security Department of Public Order. This department is also responsible for planning and applying the basic training program and in-service training programs for the assigned or working personnel of the community policing units across the country. According to the circular related to community oriented policing, there are two main training programs for the personnel of COP units: Community Oriented Policing Basic Training, and In-service Training. Whereas COP basic training is offered to all the personnel assigned to COP units, in-service training programs are offered to the personnel working in COP units to improve and refresh their information and knowledge related to COP.[42]

The COP Basic Training Program, which is the focus area of this study, is planned, organized and applied cooperatively by the General Directorate of Security

[42] http://www.asayis.pol.tr/tdpegitim.asp

Department of Public Order and the General Directorate of Security Department of Training. This training program is organized as a 60-hour course.

The aim of this program was to train officers on understanding a comprehensive definition of community policing, to give or improve skill and knowledge of officers for incorporating principles of community oriented policing into their job, to enhance understanding of the importance of police-citizen collaboration in preventing crime in the community and the importance of police-citizen relationship, and to train the application of COP in their duty areas and how to solve problems they encounter during their work collaboratively with citizens and other public-private sectors. In brief, this training program aims to move values and attitudes of officers away from traditional policing and to apply the new policing model of community oriented policing.

Since 2006, the COP Basic Training program has been conducted four times and all of them were offered online. The fourth online COP Basic Training program is the interest of this study. It was conducted between May 25 and June 5, 2009. Table 4 presents the COP Basic Training programs conducted so far and the number of their participants.

Table 4: COP Basic Training Programs and Their Participants[43]

Year	Term	Number of Participants
2007	1st Term	520
2008	2nd Term	440
2009 (February 16-27)	3rd Term	647
2009 (May 25-June 5)	4th Term	1406
Total		3013

For the fourth online basic training program, 1406 officers participated. The list of the number of participants of this training program according to their cities is presented in

[43] This table was produced depending on the records of General Directorate of Security Department of Public Order.

Appendix A. These officers were selected by their City Directorate of Security and they were either assigned to the COP units or expected to be assigned. Approximately two months before the training program the General Directorate of Security Department of Public Order sent an official letter to all city police departments of the country to inform them of the program and asked each of them to provide a list of the officers who they wanted to send to this course. When selecting the officers who will participate to the COP basic training program, these prerequisites are taken into account:

- Officers should have at least 12-month experience in the Turkish National Police.
- They should not have any negative record for last three years.
- They should have driver license.
- They should be eager to work in COP units.
- They should have ability to understand and explain.
- They should have ability to make judgments between different events.
- They should have ability to establish relationships, to communicate, to use their body language, and to empathize.

Table 5 presents the demographic characteristics of the officers who participated to the 4th term online COP basic training program.

Table 5: Demographic Characteristics of Participants of the 4th Term Online COP Basic Training Program

Rank	Line officer	Sergeant	Lieutenant	Captain	Major	**Total**
	1217	82	64	30	13	1406
Gender	Male		Female			**Total**
	1319		87			1406

This program was presented as an online in-service training program. This program offered a synchronous training for the officers. For each day, there were 6-hour

lessons. Although participants were expected to follow the lessons simultaneously, they did not have to do so. Because all lessons were recorded as video and published, all PowerPoint and other presentations were uploaded to the website, and there was also some other resources related to lessons on the website, those who could not follow the lessons synchronously because of their work or personal issues or those who wanted to repeat the lessons could watch the lessons or read the materials asynchronously whenever and wherever they wanted. This feature of the course also provided opportunity to review what they learned during the training program after the course ended.

During the program, participants were expected to follow the lessons through their work computer (or home computer, etc.). The city police departments had to provide computers connected to the internet during the lesson hours for the officers who did not access to the internet. In order to follow the lessons, officers should have entered a user name and password. When they wanted to ask questions, they could ask through e-mail during the lessons or after the lessons. The success of the participants was assessed through a pass/fail grade scale based on an exam at the end of the course, and all the participants passed.

The lessons of the COP Basic Training program were provided both by ranked police officers who were experts on COP and who had academic or professional training on COP, and by academician from Universities. Details on the lessons are provided in Appendix B.

CHAPTER 4

METHODOLOGY

4.1. RESEARCH QUESTION AND HYPOTHESES

This chapter presents the study methodology including the research question, hypotheses, design, data and variables, and validity and reliability. Because the main interest here is the relationship between self-directed learning and outcomes of an online police training program, one research question focusing on this issue guides this study.

4.1.1. The Research Question

Is there any relationship between the officers' self-directedness and the outcomes (perceived learning level, satisfaction, and gain or attitude change toward COP) of the online COP training program?

Literature claims that success or degree of self-directed learning depends on learners' readiness for self-directed learning or degree of their self-directedness (Durr et al., 1996; Fisher et al., 2001; Grow, 1991; O'Shea, 2003; Oddi, 1986). In their theoretical PRO model, Brockett & Hiemstra (1991, p. 30) propose that there is a link between outcomes of a learning program or success and being self-directed in the self-directed learning environment. According to this model, there should be balance and harmony between learners' self-direction and self-directed learning environment. That is, if there is not any balance and harmony between self-directedness level of learner and the learning process, difficulties and frustration arise and success in the learning process will be affected negatively (Brockett & Hiemstra, 1991). Because the online learning is a self-directed learning process (Gray, 1999; Ibrahim & Silong, 2000; McVay, 2000; Song & Hill, 2007), the theoretical proposition of the PRO model and the claims of the literature

can also be accepted for the online learning environments. Some studies also support the positive relationship between self-directedness and outcomes (e.g. success) of online learning environments (Abdullah, Koren, Muniapan, Parasuraman, & Rathakrishnan, 2008; Corbeil, 2003; P. Guglielmino & Guglielmino, 2003; McVay, 2000). Consequently, the hypotheses for this research question are:

H1: *There is a positive relationship between self-directedness level of police officers and their learning level in the online training program.*

H2: *There is a positive relationship between self-directedness level of police officers and their satisfaction with the online training program.*

H3: *There is a positive relationship between self-directedness level of police officers and their gain (changes in their attitudes toward community oriented policing) after the online training program.*

Because based on previous research the changes in attitudes of police officers toward community oriented policing is measured through six variables in this study, there are also 6 sub-hypotheses under the third hypothesis:

H3a: *There is a positive relationship between self-directedness level of police officers and changes in their support to non-traditional policing after the online training program.*

H3b: *There is a negative relationship between self-directedness level of police officers and changes in their support to traditional policing after the online training program.*

H3c: *There is a positive relationship between self-directedness level of police officers and changes in their orientation to COP after the online training program.*

H3d: *There is a positive relationship between self-directedness level of police officers and changes in their support to COP after the online training program.*

H3e: *There is a positive relationship between self-directedness level of police officers and changes in their perception about police-public relations after the online training program.*

H3f: *There is a positive relationship between self-directedness level of police officers and changes in their perceived problem solving capability after the online training program.*

4.2. DATA

As mentioned above, the main interest of this study is to examine the predictors of outcomes of the online COP training program and to understand the relationship between self-directedness of officers and these outcomes. Because the aim of this training program is to move the attitudes and behaviors of the officers from traditional policing to non-traditional COP policing, one of the expected important outcomes of this training program is the change in officers' attitudes toward COP at the end of the program. To be able to measure if there was any change in attitudes of officers, the evaluation research principles were followed during the data collection process. The evaluation refers to a research study in which the effectiveness of a policy, program, or way of doing something is assessed (Kraska & Neuman, 2008). The primary task in evaluation research is "to identify whether a particular intervention has an impact on specific outcomes" (David Weisburd, 2000, p. 182). Basically, it can be said that "evaluation research is a process of determining whether the intended result was produced" (Maxfield & Babbie,

1998, p. 321). Like other research, an evaluation depends on design, sampling, measurement, data collection procedures, and analysis (Maxfield & Babbie, 1998).

4.2.1 Research Design

In terms of research design, it is clear that the true experimental design in which units of analysis (subjects) are randomly assigned into at least one control (intervention absent) and experimental group (intervention present) is seen as the most appropriate to understand any effect of an intervention on outcomes (Singleton & Straits, 2005). However, because there was no control group and random assignment opportunity for the Online COP Basic Training program , the data of this study were collected through a "pre-experimental design," *the one-group pretest-posttest design* (Campbell & Stanley, 1966; Kraska & Neuman, 2008; Singleton & Straits, 2005). The one-group pretest-posttest design, which is commonly used in educational research, includes observation and measurement of one group as a pretest (O_1), implication of a treatment as an independent variable (X), and observation of the group again as a posttest (O_2). This design does not include any control group or random assignment. The one-group pretest-posttest design is illustrated in the diagram below (Campbell & Stanley, 1966; Singleton & Straits, 2005).

$$O_1 \quad X \quad O_2$$

To achieve this study through this pre-experimental design, a survey including instruments measuring attitudes toward COP was delivered to all participants of the training program before the training program, and the same instrument was also delivered to all participants at the end of the training program. The differences between posttest and

pretest will give us the change in the officers' attitudes toward COP at the end of the training program.

Despite the one-group pretest posttest design is used widely, a number of possible threats mentioned to its validity (Campbell & Stanley, 1966; Cook & Campbell, 1979). Although the aim of this research design is to show the influence of an intervention on outcomes (difference between O_2 and O_1), because of those threats to internal validity, in this study, it is more appropriate to approach cautiously when talking the effect of the online training program on changes in officers' attitudes toward COP at the end of the training program.[44]

4.2.2. Sampling

Sampling can be defined as a process in which we select observations, or in general, in which we select some part of a population (Maxfield & Babbie, 1998). Because it is attempted to measure the outcomes of the online community policing training program and to identify what predicts those outcomes in online learning environment, this study is interested in all the TNP officers who participated in the online COP basic training program. Therefore, all the participants of the 4th term Online COP Basic Training program were selected as the sample of this study. There were 1406 participants of the training program working in 79 city police departments of Turkey. As mentioned in chapter III, the participants were identified by their departments. Although participants were not randomly assigned to that training program, some of their demographic characteristics show similarities to the general population of the Turkish

[44] A candid discussion about the threats to validity related to one-group pretest posttest design is presented in the validity and reliability part of this chapter.

National Police.[45] For example, whereas female officers constitute approximately 5 percent of the population of TNP, 6 percent of the participants of the 4th online COP training program were female. On the other hand, whereas 85 percent of the participants were line officers, in the general population of TNP the portion of line officers is 92 percent.[46] Table 6 shows the distributions of both the participants of the training program and the population of the TNP according to their gender and rank.

Table 6: Comparison of Distribution of Participants of the Training Program and the General Population of the TNP according to their gender and rank

	Participants of the Training Program			**General Population of TNP**		
Gender	Male	Female	Total	Male	Female	Total
	1319	87	1406	195,330	11,333	206,663
	94%	6%	100%	95%	5%	100%
Rank	Line Officers	Ranked Officers	Total	Line Officers	Ranked Officers	Total
	1217	189	1406	191,371	15,292	206,663
	85%	13%	100%	92%	8%	100%

Finally, for the pretest of this research, the response rate was 1162 (83%). For the posttest, the response rate was 1006 (72%). But, when we matched the data of the pretest and posttest, the response rate including the officers who responded to both pretest and posttest was 884 (63%).[47]

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[45] It should be noted that there could be other important variables differentiating the general population of TNP from the participants of the training program. However, because the TNP provided only gender and rank variables for the population of TNP, I could compare them.

[46] Although this table shows similarities between population and sample in terms of proportions, the one sample *t*-test showed that whereas participants of the training program are not different from the general population in terms of gender, they are different in terms of rank (*t* for gender=-1.09, and *t* for rank=-6.6).

[47] It is seen that there is attrition when trying to match the data. However, after the attrition the group still appears similar. For example, whereas percentage of female was 5.3 before attrition, it is 5.2 after attrition; whereas percentage of supervisors was 11.1 before attrition, it is 11.3 after attrition. Moreover, whereas the average age was 33.77 before attrition, it is 33.74 after attrition. The one sample *t*-test also support this

4.2.3. Instrumentation

The data used in this study were collected through a self-administered survey method: web survey. The survey research method is generally accepted as a quantitative data collection method (Kraska & Neuman, 2008; Neuman & Wiegand, 2000; Singleton & Straits, 2005). According to Hagan (2006), "social surveys are means of data gathering in which a segment of the population reports their attitudes and/or behavior" (p. 117). In self-administered surveys, the questionnaire can be hand delivered, and the respondents can fill it out in a group or individually (Singleton & Straits, 2005). The basic future of self-administered questionnaires is that respondents complete these questionnaires themselves (Maxfield & Babbie, 1998). Today, there are three most commonly used self-administered survey methods; mail surveys, e-mail surveys, and web surveys (Dillman, 2007). The other survey types are in-person interview surveys (face to face interview) and telephone surveys (telephone interviewing) (Dillman, 2007; Maxfield & Babbie, 1998; Singleton & Straits, 2005).

The participants of the online COP training program were located in 79 different cities of Turkey. Because sending the questionnaire to them through mail or establishing telephone or face-to-face interview was difficult and costly, a self-administered web-survey method in which the questionnaires were delivered through a Web address (URL) was used (Dillman, 2007).

One of the important things in survey research is the survey questionnaire. The survey questionnaire used during the data collection process of this study was comprised of four parts; questions/instruments measuring attitudes toward COP, the instrument

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similarities; the differences for any of these variables are not significant (t for gender=-.272; t for rank=-.293; t for age=-.145)

measuring self-directedness level of adults in learning environment (OCLI), the instrument measuring learning strategies (ATLAS),[48] and general questions related to both participants and their perceptions about the training program.

4.2.3.1. Instruments Measuring Attitudes of Officers toward COP

To measure attitudes of officers toward COP, six multi-item scales were adopted from the studies of Haarr (2001), Rosenbaum, Yeh, Wilkinson (1994), Lurigio and Skogan (1994), and Adams et al. (2002). Through these scales officers' support for both community oriented policing and traditional policing, their orientation to COP, their attitudes toward police-citizen relations, and their problem-solving capabilities were measured both in the pretest and the posttest.[49]

4.2.3.2. The Oddi Continuing Learning Inventory (OCLI)

As mentioned previously, there are two instruments widely used to assess self-directedness of adults in learning; Guglielmino's Self-Directed Learning Readiness Scale (SDLRS) and Oddi's Continuing Learning Inventory (OCLI) (Merriam et al., 2007). To measure self-directedness level of the police officers participating in the Online COP Basic Training program, the OCLI instrument was used in the survey questionnaire because, compared to the SDLRS, OCLI is free to administer,[50] it took less time to complete, and there was no significant controversy in the literature concerning the validity and reliability of this instrument.

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[48] Because learning strategies of adults is not interest of this study the ATLAS instrument is not explained here.

[49] These scales are examined comprehensively in the measurement of the variables part.

[50] For the purpose of this research, a royalty-free copyright license for the use of the OCLI was granted by Lorys F. Oddi.

The OCLI was developed to identify the self-directed continuing learners (Oddi, 1986), and it helps researchers to assess self-directedness of the adult learners as a personality trait (Merriam et al., 2007). OCLI includes 24 items or statements (e.g., "I am too old to learn anything new") which are 7-point likert scales, and each of these statements is scored on a scale of 1 (strongly disagree) to 7 (strongly agree). Five of these items (17, 20, 12, 24, and 21) are reverse coded (Harvey et al., 2006).

4.2.3.3. General Questions related to the Officers and Their Perceptions of the Online Training Program

The general questions of the survey instrument used for data collection were comprised of 23 questions (17 close-ended and 6 open-ended questions). Through these questions, the survey provided data on demographic characteristics of the officers, their personal attributes, the context that they were in or they experienced during the training program, their perceived learning level in the program, their satisfaction with the program, and their opinions about advantages and disadvantages of this online training program. It should be indicated that the general questions, except the scales measuring the perceived learning level and satisfaction of the officers, was developed based on Dillman's (2007) "Tailored Design Method" and its principles related to constructing the responded-friendly questionnaire.

Finally, this section also included two scales. One of these scales assessed the perceived learning level of the officers in the training program and had been adapted from Priluck (2004). It contained 5 items (e.g., "I feel I learned a lot besides the normal course material") which were 5-point likert scales, and each of these items was scored on

a scale of 1 (strongly disagree) to 5 (strongly disagree).[51] The other scale assessing the satisfaction of the officers with the training program was adapted from Schwartz & Yonkers (1991), and it included 4 items (e.g., "I overall satisfied with this training program") which were 5-point likert scales, and each of these items was scored on a scale of 1 (strongly disagree) to 5 (strongly disagree).[52]

4.2.4. Data Collection Process

The Turkish context of this study also required several additional steps of the data collection process. First of all, the data for this study were collected under the approval of the MSU Institutional Review Board (IRB). After identifying the aim of this study and research questions, a survey questionnaire including all the necessary scales and questions was developed. Then, the questionnaire was translated into Turkish by the author of this study. In order to check the accuracy of the translation, and assess whether respondents comprehended the questions as it was intended, a cognitive interview was conducted with 7 members of Turkish National Police (Biemer & Lyberg, 2003). Four of them were graduate students in the U.S., two of them were officers who graduated from graduate programs in the U.S. and were working in TNP, and one of them was a graduate from a graduate program in the U.S. and was working in a COP unit in Turkey. These interviews were conducted using the "retrospective interview technique"(Biemer & Lyberg, 2003); interviewees were first asked to complete the questionnaire as if they were real subjects of the research, then they were asked to compare the Turkish version of it with the English version so that they could figure out whether they were translated

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[51] Although Priluck's scale had 4 items, I added one item asking to what extent the officers agree or disagree that the online training program increased their learning level on COP.

[52] Though the original satisfaction scale had 3 items, one item was added ("This training program was a waste of time") because it was thought necessary by the author of this study.

correctly. The interviewees were asked whether they found anything problematic with the questionnaire and especially with the general questions part and how they could be adjusted. They were also asked to think about congruity of the questions to the Turkish National Police context. After this cognitive interview, a few changes were made in the questionnaire.

To be able to conduct this research in TNP, permission was sought from the General Directorate of Security and consultation took place with the General Directorate of Security Public Order Department about how to conduct it. Then, the data collection process was done through a pretest-posttest design. Two questionnaires were provided.[53] The first questionnaire (for pretest) included scales related to attitudes to COP, the OCLI instrument, and the ATLAS instrument. The second questionnaire included general questions (related to personal characteristics of the officers, their perceptions about the training program, skills etc.) and the same scales related to attitudes to COP which were asked in the first questionnaire. As it is seen, only the instruments related to attitudes toward COP were administered for both pretest and posttest. The questionnaires were published in the "Survey Monkey" website.[54] The General Directorate of Security also put two links for the first and the second questionnaires into their website.[55] This department also wrote an official letter to inform all participants about their responsibilities when they would participate to the training program, and how they could enter and follow the lessons six days before the training program. This official letter also included information related to the survey. It was indicated that this survey was not

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[53] The Questionnaires are presented in Appendix C.

[54] www.surveymonkey.com

[55] http://www.asayis.pol.tr/

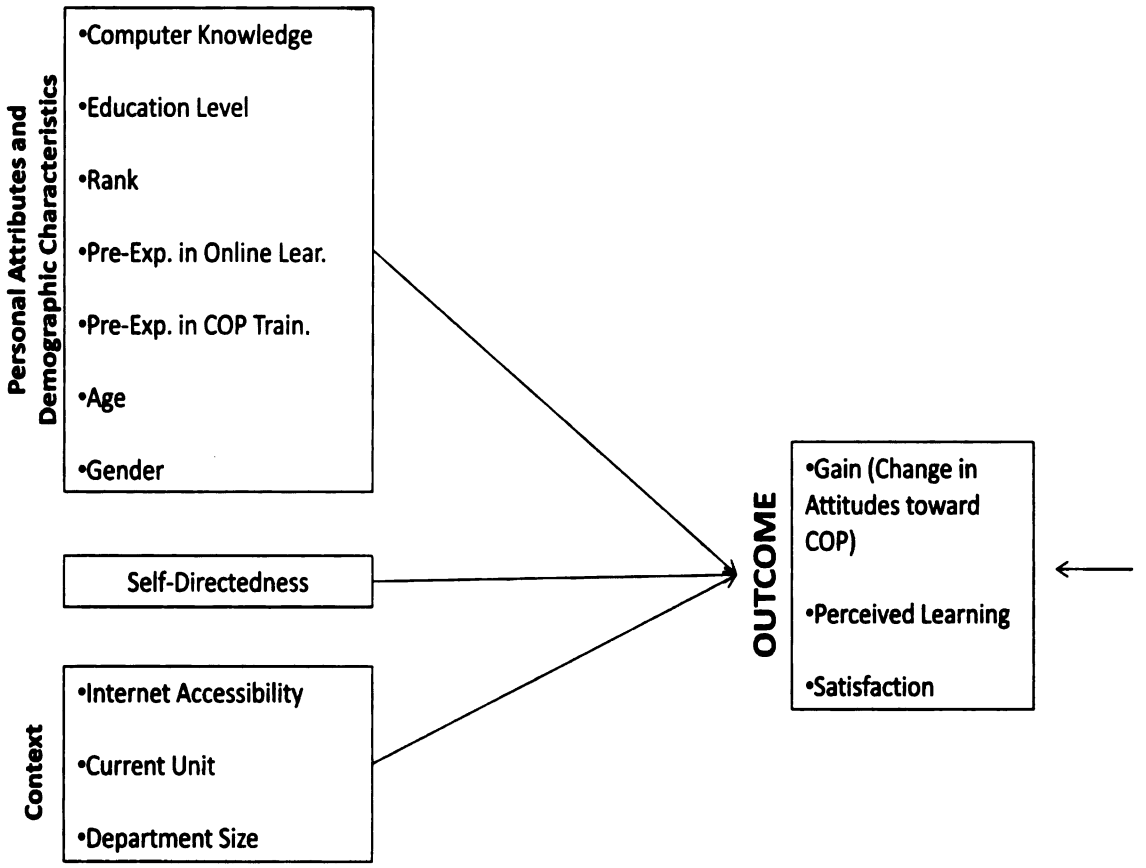
organized by the TNP, but it was organized to measure success of the online training program and its results would be very helpful to develop this program. The letter also explained that participation to this survey was not mandatory. The Turkish version of the consent form approved by IRB was also attached to that official letter and participants asked to complete the first survey by the noon of the first day of the training program and to complete the second survey after the training program within 15 days if they wanted to participate in the surveys. Whereas the participants could not enter the first survey after the noon of the first day of the training program, they also could not enter the second survey before the end of the training program. In order to enter the surveys, participants were asked to put the last five digits of their citizen ID number.[56] The reason for including the five last digits of the citizen ID numbers was to be able to match the pretest and the posttest responses.

4.3. MEASUREMENT OF THE VARIABLES

As mentioned previously, relying on the PRO model, as well as previous literature related to online learning and police training, a logic model was developed to predict the outcomes of the online COP training program. In this model, there are three types of predictor variables: self-directedness level, variables related to personal attributes and demographic characteristics of the officers and variables related to the context. Figure 3 demonstrates the logic model of this study. In this part, measurement of each variable of this model is explained.

[56] Citizen ID number is comprised of 11 digits.

Figure 3: The Logic Model for Online COP Basic Training Program



4.3.1. Dependent Variables

As emphasized, the dependent variables of this study are outcomes of the online COP training program. These are gain (change in attitudes of officers toward COP at the end of the training program), perceived learning level officers, and their satisfaction with the training program.

4.3.1.1 Gain (Change in officers' attitudes toward COP):

The online COP training program aimed to move values and attitudes of officers away from traditional policing to the non-traditional policing model of community oriented policing. Therefore, in this study, it is expected that if the online COP training

program was successful, there should be changes in the attitudes and behaviors of the officers in favor of COP (Rosenbaum & Wilkinson, 2004).

It is clear that to measure gain (change in attitudes) it was necessary to measure attitudes toward COP before and after the training program. The pretest posttest design provided opportunity to measure this concept. Drawing upon the research of Haarr (2001), Rosenbaum, Yeh, Wilkinson (1994), Lurigio and Skogan (1994), and Adams et al. (2002), 6 variables were used to measure attitudes of officers toward COP before and after the training program. Because the scales measuring six variables, which are mentioned below, related to attitudes toward COP were applied both in the pretest and posttest, the differences between the results of these two tests for each variable gave gain or the change in the officers' attitudes toward COP at the end of the training program. That is, there were six variables measuring gain and the score of each variable ranged from –n to +n.

The variables used to measure attitudes of officers are support for non-traditional policing, support for traditional policing, orientation to COP, support for COP, perception about police-public relations, and perceived problem solving capability.[57]

1-Support for Non-traditional Policing:

To measure officers' support for non-traditional COP policing activities, the scale comprised of 7 items based on 4-point likert scales was used.[58] This scale measured

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[57] As mentioned, scales measuring these variables were adapted from prior studies. Because these prior research used additive indexes in order to measure attitudes toward COP (such as Haarr, 2001, and Adams et al., 2002), and because the internal consistency (reliability) is high among all items for each scale (the Cronbach's coefficient alpha > .70 for each scale), for this study additive indexes were used instead of factor scores. Although the use of additive indexes can be seen limited because it assumes all items have the same weight or importance and have the same distance between levels, it can provide opportunity to compare results with previous research. In addition, comparison between factors scores and additive index scores of same constructs showed that these two are highly correlated; that is, the correlation scores ranged from .97 to .99.

officers' attitudes regarding how much of their departments' resources should be committed to non-traditional policing activities (or COP related activities) mentioned in each item. Each of the items was scored on a scale of 1 (none) to 4 (large amount).These items were:

- Patrolling on foot in neighborhoods
- Marketing police service to the public
- Explaining crime prevention techniques to citizens
- Handling special events
- Researching and solving problems
- Coordinating with other agencies to improve the quality of life in the city
- Working with citizen groups to resolve local problems

The reliability test showed that this scale was internally consistent (Cronbach's alpha for pretest=.73 and for posttest=.75). The total scores for this scale were expected to range from 7 referring to the lowest level of support for non-traditional policing to 28 referring to the highest level of support for non-traditional policing.

2- Support for Traditional Policing:

To measure officers' support for traditional policing activities, the scale comprised of 7 items based on 4-point likert scales was used.[59] This scale measured officers' attitudes regarding how much of their departments' resources should be

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[58] The original scale was based on 10 items but 3 items were removed because they are not suitable for Turkey context. Those items are "Patrolling on bikes in neighborhoods", "Understanding the problems of minority groups", "Getting to know juveniles".

[59] The original scale was based on 4 items, but 3 items mostly related to traditional policing especially in Turkey context were added.

committed to traditional policing activities mentioned in each item. Each of the items is scored on a scale of 1 (none) to 4 (large amount).These items were:

- Assisting persons in emergencies
- Helping settle family disputes
- Responding to calls for service
- Checking buildings and residences
- Responding to crimes
- Investigating criminal incidents
- Traffic enforcement

The reliability test showed that this scale was internally consistent (Cronbach's alpha for pretest=.72 and for posttest=.77). The total scores for this scale were expected to range from 7 referring to the lowest level of support for traditional policing to 28 referring to the highest level of support for traditional policing.[60]

3- Orientation to COP:

This variable refers to the officers' opinions about COP activities and their effectiveness. The scale comprised of 9 items based on 5-point likert scales was used to measure this variable. This scale assessed officers' opinions about COP related activities through their agreement with each item. Each of the items was scored on a scale of 1 (strongly disagree) to 5 (strongly agree). These items were:

- Police officer should make frequent informal contacts with the people in their beat.
- Police officers should try to solve non-crime problems in their beat

[60] Opposite of the other scales related to attitudes officers toward COP, for this scale, it was expected a negative change in officers support for traditional policing at the end of the training program.

- Crime in their beat is not the only problem that police officers should be concerned about
- Police officers should work with citizens to try and solve problems in their beat
- Assisting citizens can be as important as enforcing the law
- Citizens know more about what goes on in their area than the officers who patrol there
- The prevention of crime is the joint responsibility of the community and the police
- Lowering citizens' fear of crime should be just as high a priority for the department as cutting the crime rate
- Without citizen cooperation, the majority of crimes would never be solved

The reliability test showed that this scale was internally consistent (Cronbach's alpha for pretest=.74 and for posttest=.81). The total scores were expected to range from 9 referring to the lowest level of orientation to COP to 45 referring to the highest level of positive orientation to COP.

4- Support for COP:

This variable refers to the direct opinions of the officers about COP, and it was measured through a 7-item and 5-point likert type scale. This scale measured officers' support for COP according to their agreement with each of the items. Each of the items was scored on a scale of 1 (strongly disagree) to 5 (strongly agree). These items were:

- COP prevents street officers from performing more important activities, such as responding to emergency calls **(R)**[61]

[61] **(R)** refers to reverse coded.

- COP makes it easier for street officers to apprehend criminals
- COP takes good officers and turns them into social workers **(R)**
- COP is just one more fad in policing and will soon be replaced by another fad **(R)**
- COP does not provide officers with enough guidance for handling incidents **(R)**
- In most cases, referring a citizen to social services, health, or welfare agencies is a waste of police officers' time **(R)**
- COP puts more decision-making authority in the hands of the street officer

Five of these items were coded reverse. The reliability test showed that this scale was internally consistent (Cronbach's alpha for pretest=.62 and for posttest=.68). The total scores were expected to range from 7 (the lowest support for COP) to 35 (the highest support for COP).

5- Perception about police-public relations:

This variable refers to the officers' perceptions about the relationships between police and citizens and citizens' opinions of the police. The scale comprised of 5-point likert type 7 items was used to measure this variable. This scale assessed officers' perceptions about police-public relations through their agreement with each of these items:

- Most people do not respect the police **(R)**
- The relationship between the police and the people is very good
- Citizens do not understand the problems of the police **(R)**
- Most people have no idea of how difficult a police officer's job is **(R)**
- Citizens will never trust police enough to work together effectively **(R)**
- The public shows a lot of respect for law enforcement officers

- The public is more apt to obstruct law enforcement work than to cooperate **(R)**

Each of the items was scored on a scale of 1 (strongly disagree) to 5 (strongly agree). Five items of this scale were coded reverse. The reliability test showed that this scale was internally consistent (Cronbach's alpha for pretest=.76 and for posttest=.78). The total scores were expected to range from 7 to 35. This means that as the total score increases, the positive perception of the officers about police-public relations also increases; the score of 35 refers to the highest positive perception.

6- Perceived problem solving capability:

This variable refers to how the officers see themselves qualified to identify and solve the community problems that they encounter during their daily duties. The scale including 5 items based on 4-point likert scales was used to measure this variable. This scale assessed officers' perceived problem solving capability through asking how qualified they felt to do each of these items:

- Identify community problems
- Use problem-solving techniques to analyze problems
- Develop solutions to community problems
- Evaluate solutions to see how well they work
- Work with beat residents to solve problems in the neighborhood

Each of the items was scored on a scale of 1 (very unqualified) to 4 (very qualified). The reliability test showed that this scale was internally consistent (Cronbach's alpha for pretest=.88 and for posttest=.91). The total scores were expected to range from 5 to 20. This means that the officers whose total score for this scale was 20 feel themselves very qualified to identify and solve community problems.

4.3.1.2 Perceived learning level

This outcome variable refers to officers' perception of the extent that their knowledge level related to COP was affected by the training program and how much they learned from the online COP training program (Y. Zhao, Lei, Yan, Lai, & Tan, 2005). To measure perceived learning level of the officers a 5-item scale was used. This scale assessed perceived learning level through officers' agreement with these items:

- The training was effective in facilitating my learning
- I feel I learned a lot besides the normal course material
- My learning was hindered in this training program **(R)**
- I was able to focus on the learning task in this training program
- This training program increased my knowledge level on community oriented policing

Each item was scored on a scale of 1 (strongly disagree) to 5 (strongly agree). One item was reverse coded. The reliability test showed that this scale was internally consistent (Cronbach's alpha=.82). At the end of the analyses, the total scores were expected to range from 5 to 25; whereas the score of 5 will refer to the lowest level of perceived learning, the score of 25 will refer to the highest level of perceived learning.

4.3.1.3 Satisfaction

The last outcome of the online training program examined for this study is satisfaction of the officers. This variable represents to what extent the officers were satisfied with the online training program. In the literature, satisfaction has been frequently used as an outcome variable predicting the success of a training program. For example, Zhao and his colleagues examined 51 distance learning related studies

published from 1966 to 2002, and found that grades, quizzes, independent/standardized tests, student satisfaction, instructor satisfaction, dropout rate, student evaluation of learning, student evaluation of course and external evaluation had been commonly used to evaluate success of a training or learning program (Y. Zhao et al., 2005). Their results also showed that student satisfaction was used as an outcome measure by 8 of those studies. In another study, Schwartz and Yonkers (1991) focused on officers' satisfaction with police in-service training. They emphasized that although measuring satisfaction is only one part of an overall evaluation of an in-service training program, it is an important component of any assessment of training success. Moreover, Creedy and his friends examined Web-enhanced training program; specifically they focused on the relationship between students' computer skills, use of technology, ease of access and outcomes of the study as measured by students' satisfaction with the web-enhanced program (Creedy et al., 2007). On the other side some studies found that there is a positive relationship between satisfaction with a training program or some components of it and level of learning (Fredericksen, Pickett, Pelz, Swan, & Shea, 2000). For example, Swan (2001) found that student satisfaction with learning programs they were taking and their perceived learning level in that programs were the most highly correlated variables (r= .784). [62]

The satisfaction of the officers with the training program was measured by a 4-item and 5-point likert type scale. This scale assessed the satisfaction of the officers through their agreement with these items:

- I overall satisfied with this training program

[62] Any possible intervening effect of satisfaction between self-directedness and learning was also considered and explained in the analysis part of this study.

- I desire to participate another distance online training program
- This training program provided highly imported knowledge for me
- This training program was a waste of time **(R)**

Each item was scored on a scale of 1 (strongly disagree) to 5 (strongly agree). One item was reverse coded. The reliability test showed that this scale was internally consistent (Cronbach's alpha=.90). At the end of the analyses, the total scores were expected to range from 4 (the lowest level of satisfaction) to 20 (the highest level of satisfaction).

4.3.2. Independent Variables [63]

Although the logic model of this study categorizes the predictor variables under three category (self-directedness level, variables related to personal attributes and demographic characteristics of the officers and variables related to the context), for the aim of the analyses, they are categorized into two categories: independent and control variables. The main independent variable of this study is level of self-directedness of the officers. In addition to the self-directedness, several other independent variables were selected based on prior research that found they were associated with online learning. These are computer knowledge, internet accessibility, previous experience in online learning, age, gender, and educational level. Some other variables that are related to policing and learning context or COP training were examined as control variables. These variables are, previous experience in COP training, rank, current assigned unit, and department size.

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[63] All the instruments and the questions measuring the independent and the control variables (except OCLI measuring self-directedness of the officers) were administered in the posttest.

4.3.2.1. Level of self-directedness:

This variable refers to a personality trait. That is, this variable shows to what extent a person has characteristics of self-directed learners or to what extent he/she is ready to learn in the SDL. To measure this variable, the 24-item Oddi Continuing Learning Inventory (OCLI) was used. Each of the items of OCLI was scored on a scale of 1(strongly disagree) to 7 (strongly agree). Five of the items were reverse coded. At the end of the analysis of this instrument, total scores were expected to range from 24 to 168; whereas the score of 24 refers to the low level of self-directedness in learning or having least characteristic of self-directed continuing learners, the score of 168 refers to the highest level of self-directedness in learning or having the most characteristics of self-directed continuing learners (Harvey et al., 2006). That is, as the score of the OCLI increases, self-directedness of adult in learning also increases (Chou & Chen, 2008). Moreover, like the previous research finding reliability of OCLI more than .70, in this study reliability of this instrument was also high (Cronbach's coefficient alpha= .78).

4.3.2.2. Computer Knowledge

This variable refers to the level of capability or knowledge about computer technologies and the internet. Prior literature indicates the importance of computer and internet skills or knowledge for the outcomes (e.g. success) of online learning environment (McVay, 2000; Wojciechowski & Palmer, 2005). Relying on the research finding positive relationships between these two concepts (Creedy et al., 2007; Pachnowski & Jurczyk, 2000), the expectation of this study is also to find positive relationship between officers' computer knowledge and the outcomes of the online COP training program. To measure this variable, a 9-item instrument asking whether or not

participants know how to do different types of computer and internet tasks mentioned in the each of the items (e.g., "I know how to use a standard word processor, such as Microsoft word") was used. Each of the items are scored on 1 (yes) or 0 (no) scale. The sum of the "yes" answers gave us the level of the computer knowledge of the officers. Total scores were expected to range from 0 (no knowledge) to 9 (the highest level of knowledge).

4.3.2.3. Internet accessibility

This variable refers to the extent that officers access to the computer and internet both in their work environment and in their home during the training program. In the literature, it is emphasized that one of the most important barriers in front of the achievement, learning, and persistence in online learning environment is limited or lack of internet or computer accessibility (Ibrahim & Silong, 2000), and it is claimed that there is a positive relationship between accessibility and success and satisfaction of the students in online learning environments (Creedy et al., 2007; Murphy et al., 2007; Pachnowski & Jurczyk, 2000). To measure this variable in this study the question asking police officers to what extent they had opportunity to use internet during the training program was used. Answers are broken into four categories from 1 (not at all) to 4 (very great extent).

4.3.2.4. Previous experience in online learning

This variable refers to whether the officers had participated to any learning program offered online before this online COP training program. According to literature, those who have experience in any online training program or online learning previously are more likely to be motivated to participate in another online learning program and they

will enjoy it because they are more familiar with the online learning process and they are less likely to feel anxiety and uncertainty (Wu & Hiltz, 2004). Some research also showed that there was a positive significant relationship between the success in an online course and the number of previous online courses taken by a student (Wojciechowski & Palmer, 2005). To measure this variable, the question asking if the officers had participated in any online learning program was used and the variable was coded as a dummy variable: 0) No and 1) Yes.

4.3.2.5. Age

This variable refers to the actual age of each officer during the training program. Prior research suggests that there might be relationships between age of the participants and their success in self-directed learning environments (e.g., online learning environment) (Harriman, 1990; Morris, 1995; Pachnowski & Jurczyk, 2000). However, there is disagreement in terms of the direction of this relationship (Harriman, 1990; Ibrahim & Silong, 2000; Wojciechowski & Palmer, 2005). In this study this variable was measured as a ratio-level continuous variable.

4.3.2.6. Gender

Although the literature indicates that females are less confident with the use of the computers (Wu & Hiltz, 2004), they are disadvantaged in the online learning environment (Gunn, McSporran, Macleod, & French, 2003, p. 14), and the childcare responsibilities lower their performance (Dutton et al., 2002), the researchers focusing on the relationship between gender and achievement or success in online learning did not find any significant relationship (Dutton et al., 2002; Wojciechowski & Palmer, 2005;

Wu & Hiltz, 2004). In this study, this variable will be coded as a dummy variable; 1) male and 0) female.

4.3.2.7. Educational Level

This variable refers to the highest educational degree that an officer completed. As opposed to the studies done in educational contexts (e.g. colleges), for the lifelong education/learning or occupational training areas, this variable can be seen as important to predict the outcomes of the online learning activities. For example, in his research focusing on a distance telecourse program conducted by a community college, Harriman (1990) found that there was a positive relationship between the education level of participants and their achievement in that course. In the data, this variable is broken into 8 categories: 1) High school, 2) Police School (1 year or 9 months), 3) Police School (2 years), 4) Two-year University, 5) Police Academy (4 years), 6) Bachelor degree, 7) Master, 8) PhD or more. Because the minimum education requirement for recruitment of police officers is high school, it was assessed as one year police academy. For the purpose of this study, these eight categories was reduced into three: 1) Police School (9 months or 1 year), 2- Two-year University (including both the two-year police school and two-year University), and 3- Four-year University and above (including all the categories from 5 to 8).[64]

[64] Because, in Turkish context, 2-years police school and two-year university refers to same educational level, and four year-police academy and bachelor degree also refers to same educational level, and the number of officers who have master or PhD degree was very small in the data, this variable was reduced into three categories.

4.3.3. Control Variables

4.3.3.1. Previous experience in COP training[65]

This variable refers to whether the officers had participated in any COP training program before this online COP training program. Like previous experience in online learning, previous experience in COP training may also have effect on the success of the officers. For example, Dutton, Dutton, & Perry (2002) showed that previous experience in computing and programming courses positively affected the success of the students in a computer programming courses. This variable was coded as a dummy variable: 0) No and 1) Yes.

4.3.3.2. Rank

In some type of occupational settings that have militaristic structure, there are some unique distinctive variables related to their personnel. Two of these variables are rank and service year. Although there is no study of online learning that has focused on these two variables in the literature, these two variables should be controlled for predicting outcomes in a police training program.[66] Although ranks of the officers were coded into 5 categories in the data (line officers, sergeant, lieutenant, captain, and major and above), because the number of the ranked officers was very small in the distribution of this variable, the categories of ranked officers were merged and this variable was put into two categories for the purpose of this study: 1) Line officers and 0) Supervisors.

4.3.3.3. Current assignment (or Current unit)

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[65] In those countries who have been applying COP for a long time, police officers are exposed to COP training in their pre-service training programs. However, because implementation of COP was started in 2006 in Turkey, the COP was put in to the curriculum of pre-service training programs just new. Therefore, there is variation in this variable.

[66] Because service year was highly correlated with age, it was removed from analysis (r=.90).

This variable refers to whether the units in which officers worked during the training program were responsible for applying perspectives of community oriented policing. According to Mastrofski and Ritti (1996), the impact of police training is affected by organizational level considerations. That is, "training has a significant positive effect in agencies that provide a supportive environment, but fails to have an effect in agencies that are otherwise indifferent or hostile to the purposes the officers are trained for" (Feltes, 2002, p. 55). For the online COP basic training program, whereas some participants were working in units responsible for applying COP, some participants were working in other units but they were expected to be assigned to COP units. Depending on Mastrofski and Ritti's (1996) theoretical approach it can be predicted that officers who were working in COP units were exposed to a more supportive environment during the training program compared with the officers who were working other departments. Therefore, their success in the training program may also have been affected positively. Although this variable has three categories in the data (yes, no, not sure), it is clear that if an officer does not know whether his/her unit is responsible for COP, this means that it is not a COP related unit. Therefore, this variable was coded into a dummy variable: 1) COP and 0) Non-COP.

4.3.3.4. Department size

Work commitment and work load are shown as barriers to successful online learning (Ibrahim & Silong, 2000; Pachnowski & Jurczyk, 2000). Police related some studies indicate that because their highly paramilitary and bureaucratic structures, social distance between supervisors and line officers, high level of organization and public demands, officers working in larger police departments experience higher stress than

officers working smaller departments (Brooks & Piquero, 1998; Morash, Haarr, & Kwak, 2006). Moreover, after suggesting that level of police stress and stressors of policing are explained by police departments, Morash and Haarr (1995) found that there was a positive relationship between stress and workplace problems.[67] There is no doubt that whereas this negative feature of the larger police departments affects all the activities of their officers, it may also affect the training process in the online environment; that is, the officers working in larger police departments might experience problems to follow the lessons online because of their workplace stress and problems compared to officers working in smaller agencies. Therefore, it can be expected that there might be a relationship between success and gain of officers in an online learning program and the size of the department in which they work. To measure this variable the total number of police officers working in each city police department in which each of the participants of the online COP training program worked was used. This data was provided by the Personal Department of the General Directorate of Security of Turkey.

4.4. VALIDITY AND RELIABILITY

The validity and reliability related to this study can be examined through internal and external validity, and measurement validity and reliability. In terms of internal validity, although the one-group pretest posttest design is widely used in the social science research and educational research, the literature mentions some possible threats to

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[67] Although there are some other claims indicating that despite there are more workloads in large police departments, there are also more officers and it is easier to cover their shifts, thereby there may be less stress for police officers in large police departments, for Turkish context we can accept the findings and claim of previous research more appropriate. That is, although there are more officers in larger police departments of TNP, they are not enough to respond work expectation effectively. Therefore, as far as the author of this study observed, people working in the big city police departments in Turkey are under stress more than those working in small city departments.

internal validity of the research conducted through this design; such as, history, maturation, testing, statistical regression, and instrumentation (Campbell & Stanley, 1966; Cook & Campbell, 1979). Regarding the selection process of officers for this training program,[68] we can also talk about selection bias, though it is not mentioned as a threat to internal validity of one-group pretest posttest design by the literature. Although this study's main goal is not related to effectiveness of online COP police training, it is important to keep in mind short comings and limitations of the one-group pretest and posttest design due to these validity threats when we talk about the gain scores associated with the training's effectiveness.

The history threat refers to some events other than the intervention that may occur between pretest and posttest and may affect the outcome. This kind of threat is more likely in experimental research lasting a long time (Maxfield & Babbie, 1998). This is minimized for the online COP training program because of the 10-day program format. Additionally, the national sample makes it less likely that a significant event would affect the opinions of all officers from 79 different cities. Although it seems that because of the short time period of this study and national sampling, effect of history threat is low for this study, we should still admit that because this study was not a laboratory study and it was done in the field, there may have been some outside influences effecting the gain at the end of this program and this study could not provide enough opportunities to control this external influences.

The testing threat indicates that because of being exposed to the pretest, subjects may become aware of the goals of the study and they may change their performance in

[68] The selection process is explained in Chapter 3.

the posttest (Maxfield & Babbie, 1998; Singleton & Straits, 2005). To rule out this threat, both in the consent form and during the training program, the aim of the research, assurances about confidentiality, and importance of being objective and realistic in answering the questions in order to improve this kind of program were emphasized with the goal of increasing their honesty during the survey process. However, it should be admitted that this may have not been an effective solution for this threat and the short time period (10-day format of the program) may have increased the effect of this threat.

Maturation referring to any psychological or physical changes in subjects (respondents' growing older, stronger, wiser, more experienced, etc.) during the course of the experiment may be seen less important for this study because of short time period (Cook & Campbell, 1979). Statistical regression threat indicates that it will be wrong to attribute change to an intervention (treatment) "when an effect might be due to respondents' being classified into experimental groups at...the pretest on the basis of pretest scores or correlates of pretest scores" (Cook & Campbell, 1979, p. 52). Although we cannot talk about any this kind of classification for this study, we can talk about high pretest scores of some respondents due to their specific characteristics, such as their high self-directedness level.[69] Here, we can also talk about selection threat because the officers may have been selected because of their some characteristics for this online COP training program. It is clear that this may also affect internal validity of this study. Finally, the instrumentation threat refers that changes in the obtained measurement may be produced by the changes in the calibration of a measuring instrument or the changes in

[69] This issue is discussed in chapter six, section 6.1.

the observers or scorers used between pretest and posttest. Because there was no this kind of change, this threat is also seen not plausible for this study.

External validity refers to "the ability to generalize experimental findings to events and settings outside the experiment itself" (Kraska & Neuman, 2008, p. 258). In the literature, two common threats to external validity of research conducted through the pretest posttest design are mentioned; testing effects and selection bias (Campbell & Stanley, 1966; Cook & Campbell, 1979). For this study, the selection bias might be seen as a threat to the external validity because of the non-random selection of the participants of the training program. However, as it is showed above, although the officers who participated to this training program were selected by their departments non-randomly, their distribution demonstrates similarities to the general population of the TNP. On the other hand, threat of testing effect to external validity indicates that the results obtained from the pretested group may not represent the effect of the treatment on un-pretested population (Campbell & Stanley, 1966; Hagan, 2006; Kraska & Neuman, 2008). Any possible effect of this threat was also tried to be minimized through precautions mentioned in the testing threat to internal validity. However, because of these threats, caution will need to be exercised before generalizing to all TNP officers.

An additional step to increase validity and reliability was reliance on instruments and scales that have been used in prior research. First of all, the scales measuring attitudes of the officers' toward COP were used by a number of previous researchers as valid and reliable instruments (e.g., Adams et al., 2002; Haarr, 2001; Lurigio & Skogan, 1994; Rosenbaum et al., 1994). The construct validity of this scales were confirmed by Lurigio & Skogan (1994) and Rosenbaum et al. (1994). Haarr (2001) also supported the

validity and reliability of these instruments. The second instrument, OCLI, measuring the level of self-directedness of the officers in learning environment, was developed and confirmed as a valid and reliable tool for identifying self-directed learners by Oddi (1986). Validity (especially construct validity) and reliability of this instrument were also confirmed and supported by later research and studies (Bartlett, 1999; Harvey et al., 2003, 2006; Landers, 1989; Oddi et al., 1990; Six, 1987). Finally, the scales measuring perceived learning level of the officers and their satisfaction with the training program were also presented as reliable and valid scales in prior research (Priluck, 2004; Schwartz & Yonkers, 1991; Sweeney & Ingram, 2001).

4.5. ANALYTIC STRATEGY

The data analysis process of this dissertation was done through quantitative data analysis techniques. As analytic tools, SPSS and STATA software were utilized.[70] During the analysis process, first, reliability assessments of the instruments were applied through looking their internal consistency (Cronbach's Coefficient Alpha). Then, general description of the sample and variables were drawn by univariate (descriptive) analyses. In terms of bivariate analyses, correlation (Pearson Correlation Coefficient) and the matched-groups (or the dependent samples) *t*-test were conducted. Whereas correlation analyses helped to examine bivariate relationships between the variables and to determine availability of any multicollinearity issues, the matched-grouped *t*-test helped to understand if there was any significant change in police officers' attitudes toward community policing at the end of the training program. Finally, to test the hypotheses of

[70] Especially during the testing OLS assumptions process STATA was used because SPSS did not provide opportunity to test Homoscedasticity assumption statistically.

this study and to figure out the predictors of the outcome of the online COP training program, the Ordinary Lest-Squares (OLS) regression analysis was applied as a multivariate analysis method. The OLS regression analysis provided opportunity to estimate the form of the relationship among each of the outcome variables and all of the independent variables at once. More specifically, the OLS made possible to estimate the unique effect of each independent variable on each of the outcome variables controlling for the effects of other independent variables (M. P. Allen, 1997).

CHAPTER 5

ANALYSES AND FINDINGS

In this chapter major research findings regarding prediction of outcomes of the online COP training program are presented. First, the results of univariate analyses (descriptive statistics) are presented. The descriptive statistics provide information about general characteristics of the sample and the distributions of the both independent and dependent variables. The bivariate analysis follows the descriptive statistics. Through this analysis the bivariate relationships among all variables are examined. Finally, the results of multivariate analyses obtained through Ordinary Least Square regression analysis method are presented.

5.1. DESCRIPTIVE STATISTICS

5.1.1. Descriptive Statistics for Independent and Control Variables

As mentioned, the main interest of this study is to examine the relationship between level of self-directedness of the police officers and the outcomes (learning, satisfaction, and gain) of the online training program. Therefore, the main independent variable is self-directedness level of the officers. However, relying on the literature on online learning and police training related studies, ten more variables also were added into the logic model of this study. Moreover, because the data related to self-directedness level of officers were collected during the pretest, the sample size used for descriptive analysis of this variable is different than the sample size used for the descriptive analysis of the other independent and control variables.[71]

[71] Whereas the sample size for the data related to level of self-directedness of the officers is 1156, the samples size for the data related to other independent and control variables is 1006.

Descriptive statistics presented in Table 7 demonstrate the general sample characteristics through distribution of independent and control variables. As seen in this table, the average self-directedness score of the officers (the average OCLI score) is 132.01. This score indicates that in average, officers are moderately self-directed in learning.[72] The total scores of the OCLI range from 54 to 167. This indicates that self-directedness level of the officers ranges from being moderately not self-directed to being strongly-self directed. Looking at the relatively small standard deviation (SD=12.99), it can be predicted that the distribution of the variable of level of self-directedness is relatively homogenous.

Table 7: Descriptive Statistics for Independent and Control Variables (N=1006)[a]

Variable	Mean	SD	Min	Max
INDEPENDENT VARIABLES				
Level of Self-Directedness (N=1156)	132.01	12.99	54	167
Computer Knowledge	5.06	1.69	0	9
Accessibility	3.46	.69	1	4
Pre-exp. in Online Learning (Yes=1)	.09	.29	0	1
Age	33.77	5.51	21	51
Gender (Male=1)	.95	.224	0	1
Education Level	2.22	.67	1	3
CONTROL VARIABLES				
Pre-exp in COP Training (Yes=1)	.12	.33	0	1
Rank (Line Officers=1)	.89	.32	0	1
Assignment (COP=1)	.57	.49	0	1
Department Size	3826.20	6027.09	358	32969

[a] All variables (except Level of Self-Directedness) was collected during the posttest

[72] This interpretation was done relying on Barlett's (1999) classification of the total scores of the OCLI. According to this study, the total scores of the OCLI can be interpreted as follows: 24-35 Strongly not self-directed, 36-59 Moderately not self-directed, 60-83 Slightly not self-directed, 84-107 Lowly self-directed, 108-131 Slightly self-directed, 132-155 Moderately self-directed, and 156-168 Strongly self-directed.

Table 7 demonstrates that the average computer knowledge is 5.06. This indicates that the average computer knowledge of the officers is almost at the middle level. This knowledge ranges from 0 (no knowledge) to 9 (the highest level of knowledge). The small standard deviation (SD=1.69) indicates there is no considerable variation in terms of heterogeneity across this variable. The internet accessibility ranges from 1 (not at all) to 4 (very great extent), and the mean score for the internet accessibility is 3.46 indicating that on average, the officers had high internet accessibility during the online training program. According to Table 7, in terms of previous experience in online learning, only 9 percent of the officers had experience in online learning or training before the online COP training program.

Ages of the officers who participated in the online COP training program range from 21 to 51, and the average age is 33.77. There is no significant evidence for any high heterogeneous variation in this variable (SD=5.51). As it is seen in the table, 95 percent of the officers participating in the training program were male. The education level of the officers ranges from 1 to 3 (1=One-year Police School, 2=Two-year Police School or two-year University, 3=Four-year Police Academy, four-year University or above). As indicated, approximately 65 percent of the officers have an educational level less than four-year University degree.

In terms of previous experience in COP training, Table 7 demonstrates that only 12 percent of the officers had participated in any training program related to community oriented policing before this online training. Looking at the rank of the participants, it is seen that 89 percent of them are line officers. During the training program, 57 percent were working in units responsible for applying COP principles. Finally, in terms of

department size in which officers were working during the training, the table shows that it ranges from 358 officers to 32,969 officers. The average department size is 3826.2 with standard deviation of 6027.09. The large standard deviation indicates that there is a high degree of heterogeneity or dispersion for this variable (R. Bachman & Paternoster, 2004).

5.1.2. Descriptive Statistics for Outcome Variables

As mentioned previously, this study is interested in three outcomes of the online COP training program: gain (change in attitudes of officers toward COP at the end of the training program), perceived learning level of officers and their satisfaction with the training program. Based on previous research six variables were used to measure attitudes of officers toward COP before and after the training program. These variables are support for non-traditional policing (NTP), support for traditional policing (TP), orientation to COP, support for COP, perception on police-public relations (PPR), and perceived problem solving capability (PSC). Table 8 demonstrates descriptive statistics of these variables in both the pretest and posttest. It also demonstrates significance of change from pretest to posttest for each variable according to the matched-groups (or the dependent samples) *t*-test results.[73]

As displayed in Table 8, whereas the sample size was 1162 in the pretest, it was 981 in the posttest because the response rate decreased. In addition, the sample size used in calculating the significance of change was 860 because the matched-groups *t*-test took into account the scores of officers responding both pretest and posttest. According to the table, the average support for non-traditional policing before the training program was 23.70 with standard deviation 3.16. Although the support ranges from 7 to 28, the mean

[73] Although the matched-groups *t*-test is a bivariate analysis, because it may be helpful to understand gain related variables descriptively, its results are presented here.

score indicates that the average support of the officers for non-traditional policing is high (above the moderate support) before the training program. After the training program, the average support increased to 24.23 and this change was significant (t=4.76, p<.001). The standard deviation also decreased to 2.98. Depending on standard deviation, it can be said that this variable became more homogeneous compared with pretest values.

Table 8: Attitudes toward COP before/after the Training Program and Significance of Change

	Pretest (N=1162)				Posttest (N=981)				Change[a]
Variable	**Mean**	**SD**	**Min**	**Max**	**Mean**	**SD**	**Min**	**Max**	***t* value**
Support for NTP	23.70	3.16	7	28	24.23	2.98	7	28	4.76***
Support for TP	23.61	2.95	7	28	23.45	3.27	7	28	-1.64
Orientation to COP	37.15	4.37	9	45	37.26	4.73	9	45	.98
Support for COP	25.36	3.81	7	35	26.24	3.92	14	35	7.86***
Perception on PPR	19.36	4.51	7	35	20.26	4.54	7	35	6.62***
Perceived PSC	15.38	2.13	5	20	15.67	2.10	5	20	4.62***

Note: NTP=Non-traditional Policing, TP=Traditional Policing, COP= Community Oriented Policing, PPR=Police-public Relations, PSC=Problem Solving Capability

[a] The sample size of the matched data used during the calculation of t-test was 860

*** p<.001

The average support for traditional policing was 23.61. This indicates that the average support of the officers for traditional policing is also high before the training program. Because the online COP training program aimed to move attitudes of police officers from traditional policing to non-traditional COP policing, opposite of the other variables that we expected positive change at the end of the training program, we expected a decline in support of officers for traditional policing. Although the average support for traditional policing decreased to 23.45 as it was expected, this change was not statistically significant (t=-1.64, p>.05). Similarly, significant change was not observed in orientation of the officers to COP. This variable ranges from 9 to 45 with an average of

37.15 before the training program. This indicates that officers' orientation was above the moderate level before the training program. Although, it seems there was a small increase in this orientation at the end of the training program (mean=37.26), this change was not statistically significant (t=.98, p>.05).

The biggest change was observed in direct support of officers for community oriented policing at the end of the online COP training program. Whereas the average support for COP was 25.36 with standard deviation of 3.81 before the training program, this average increased to 26.24 with standard deviation of 3.92 after the training program. This change was statistically significant (t=7.86, p<001). Moreover, whereas this variable ranged from 7 to 35 before the training program, it ranged from 14 to 35 after the training program. In terms of officers' perception on police-public relations, the average perception was 19.36 in the pretest. This value indicates that average of the officers had low level of positive perception on police-public relations before the training program. At the end of the training program, the average perception significantly increased to 20.26 (t=6.62, p<001); that is, officers' positive perception on police-public relations increased and approached to moderate level. In both pretest and posttest, this variable ranged from 7 to 35. Finally, the average perceived problem solving capability of 15.38 indicates that average of the officers felt themselves qualified in terms of problem solving capability before the training program. This perception slightly, though statistically significantly, increased to 15.67 at the end of the training (t=4.62, p<001).The standard deviation was small for both pretest and posttest (SD=2.1), and this variable ranged from 5 to 20 in both tests.

Having discussed the descriptive statistics of variables used to measure gain (change in attitudes of the officers toward COP) at the end of the training program, we can now discuss descriptive statistics of the outcome variables. Table 9 demonstrates the eight outcome variables which are of interest in this study and their descriptive statistics. Six of these variables are related to attitudinal changes of police officers toward COP at the end of the online COP training program. The other two variables measure officers' perceived learning level and satisfaction with the training program. As seen in the table, the average change in support for nontraditional policing after the training program was .54 and it ranged from -10 to 15 with standard deviation of 3.32. For the traditional policing, as mentioned before, direction of the change was negative and its average was -.19. The range for change in support for traditional policing is 27 (16-(-11)) with standard deviation 3.37. That is, comparing the change in support for non-traditional policing, the variable of change in support for traditional policing is more dispersed or distributed heterogeneously.

Table 9: Descriptive Statistics for the Outcome Variables

Variable	**Mean**	**SD**	**Min**	**Max**
Gain/Change in Attitudes (N=860)[a]				
Change in Support for NTP	.54***	3.32	-10	15
Change in Support for TP	-.19	3.37	-11	16
Change in Orientation to COP	.15	4.37	-15	21
Change in Support for COP	1.04***	3.87	-11	18
Change in Perception on PPR	.91***	4.02	-16	17
Change in Perceived PSC	.32***	2.05	-8	9
Perceived Learning Level (N=1006)[b]	19.24	3.24	5	25
Satisfaction (N=1006)[b]	15.31	3.40	4	20

[a] Because changes were measured through getting differences between posttest and pretest, the matched data was used and thereby, the sample size for changes related variables was 860.

[b] Because the data related to these variables were collected in posttest, the sample size was 1006.

In terms of orientation to COP, the average change was .15 and it ranged from -15 to 21 with standard deviation 4.37. Looking at this larger standard deviation, it can be predicted that this variable was distributed more heterogeneously than the other change variables. As mentioned above the biggest change was observed in support of officers for COP; the average change in this variable was 1.04 with standard deviation of 3.87. Finally, the average change in perception of the officers on police-public relations was 91 with standard deviation of 4.02 and the average change in perceived problem solving capability of the officers was .32 with standard deviation 2.05. Looking at the descriptive statistics of these change variables, it can be said that although four of these changes are significant as demonstrated in Table 8, on an average the changes were small.

The other outcome variable is perceived learning level of the officers. The average perceived learning level of officers in the training program was 19.24 with a standard deviation of 3.24 and it ranged from 5 to 25. This statistic indicates that on average, officers had a high level of perceived learning (more than moderate level). In terms of satisfaction, the average satisfaction level was 15.31 with standard deviation of 3.40. This mean level indicates that on an average, officers were highly satisfied with the online training program.

To sum up, it can be said that the descriptive statistics help us to take a general picture of the sample of the study and the independent and dependent variables. Moreover, it also gives an idea about the distribution of each variable (e.g. if it is normal or not). In terms of normality, depending on central limit theorem indicating that "as our sample size increases, the sampling distribution will begin to approximate normality no matter what the shape of the population from which the samples have been drawn" (R.

Bachman & Paternoster, 2004, p. 238), some claims that "even if the distribution of the variable in question is not normal and our sample size is large enough (e.g. 100 or more) it is reasonable to use statistics that assume a normal distribution" (De Vaus, 2002, p. 79). Although there is this kind of permission for large sample, I still preferred to check all of the variables for normal distribution prior to bivariate and multivariate analyses so that I could understand whether there was any serious violation of normality by any variable.[74] Descriptive statistics revealed that there was a high degree of skewness for the variable of department size (skewness=3.946, and kurtosis=16.001). Therefore, in order to be able to facilitate linear modeling through maximizing linear fit, natural log transformation was performed on this variable (Messner, 1989; Wilson, 2006). The mean value for logged department size was 7.72 and it ranged from 5.88 to 10.40 with standard deviation of .92. The logged department size was used in both bivariate and multivariate analyses.

5.2. BIVARIATE ANALYSIS

To test the hypotheses of this study at the bivariate level, to examine the relationships between all variables, and to determine availability of any multicollinearity issues, Pearson Correlations were examined. Table 10 shows the results of these analyses. As demonstrated in the table, two of the three main hypotheses are supported by the correlation analyses; H1 and H2. First, as expected in H1, there is a statistically significant positive relationship between level of self-directedness of officers and their perceived learning level in the online training program ($r=.23$, $p<.01$). This indicates that as officers' self-directedness level increases, their perceived learning level also increases.

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[74] Normality checking was done according to the rule of thumb indicating that "values for skewness and kurtosis of between -2 and +2 indicate a reasonably normal distribution" (L. F. Bachman, 2004, p. 74), and histogram of each variable.

Second, there is also a significant positive relationship between level of self-directedness of officers and their satisfaction with the online training program. That is, as officers' self-directedness level increases, their satisfaction with the online training program also increases ($r=.25$, $p<.01$). However, six sub-hypotheses (H3a, H3b, H3c, H3d, H3e, and H3f) of the third main hypothesis related to the relationship between officers' self-directedness level and their attitudinal change toward COP at the end of the online training program are not supported by the bivariate correlations.

Although bivariate correlation does not support any of these gain (change) related hypotheses, there is a significant relationship between self-directedness of officers and one of these gain variables (change in their perceived problem solving capability). However, this relationship is opposite of the expectation ($r=-.13$, $p<.01$). That is, this result indicates that there is a statistically significant negative relationship between level of self-directedness of the officers and change in their perceived problem solving capability at the end of the online COP training program.

However, it is clear that the bivariate correlation has validity related limitations. That is, the association between two variables showed by bivariate correlation analysis may be because of a third variable (extraneous variable) that explains both of them (R. Bachman & Schutt, 2001; Maxfield & Babbie, 1998). Therefore, this negative relationship mentioned above may be a spurious relationship. In order to address this problem, the following multivariate regression analysis is going to be applied to understand the unique relationship between an independent and a dependent variable controlling for other variables. At the end of the regression analysis this relationship might be invalidated if it is spurious.

Table 10: Bivariate Correlations among all Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Change in Support for NTP	1										
2. Change in Support for TP	.47**	1									
3. Change in Orientation to COP	.33**	.24**	1								
4. Change in Support for COP	.14**	.02	.31**	1							
5. Change in Perception on PPR	.07*	.00	.17**	.22**	1						
6. Change in Perceived PSC	.12**	.08*	.23**	.11*	.13**	1					
7. Perceived Learning Level	.17**	.08*	.24**	.21**	.10**	.09**	1				
8. Satisfaction	.15**	.08*	.25**	.21**	.11**	.11**	.77**	1			
9. Level of Self-Directedness	-.03	.02	-.02	-.04	-.04	-.13**	.23**	.25**	1		
10. Computer Knowledge	.08*	-.02	.06	.10**	.04	.06	.13**	.11**	.24**	1	
11. Accessibility	.07	.01	.07*	.10**	.05	.08*	.13**	.12**	.14**	.45**	1
12. Pre-exp. in Online Learn.	-.01	-.03	-.01	-.01	-.03	-.07	.01	.00	.05	.08**	.06*
13. Age	.01	.02	.01	.06	.08*	.03	.03	.02	-.05	-.28**	-.17**
14. Gender	-.07*	-.07*	.02	-.02	.00	.00	.06	.10**	-.05	-.07*	-.09**
15. Education Level	.03	.00	.02	-.05	.01	.04	.00	.01	.04	.16**	.08**
16. Pre-exp. in COP Training	-.05	.02	.03	.02	-.03	.03	.00	.00	.00	.06	.05
17. Rank	-.05	.05	.02	.04	-.05	.00	.04	.02	.00	-.04	-.10**
18. Assignment	.03	.05	.00	.11**	.03	.11**	.18**	.17**	.11**	.04	.06
19. Department Size (ln)	.01	.03	.01	.06	-.01	.07*	.06	.01	-.03	-.01	-.05

(continued)

Table 10: (continued)

	12	13	14	15	16	17	18	19
1. Change in Support for NTP								
2. Change in Support for TP								
3. Change in Orientation to COP								
4. Change in Support for COP								
5. Change in Perception on PPR								
6. Change in Perceived PSC								
7. Perceived Learning Level								
8. Satisfaction								
9. Level of Self-Directedness								
10. Computer Knowledge								
11. Accessibility								
12. Pre-exp. in Online Learn.	1							
13. Age	-.01	1						
14. Gender	-.03	.18**	1					
15. Education Level	.06*	-.32**	.01	1				
16. Pre-exp. in COP Training	.29**	-.06	-.03	.09**	1			
17. Rank	-.18**	-.14**	-.04	-.30**	-.05	1		
18. Assignment	.08*	.05	.00	.04	.07	.06	1	
19. Department Size (ln)	-.10**	.03	.01	.02	.00	.02	.11**	1

Note: Entries are Pearson Correlation Coefficient; *p<.05, **p<.01 (2-tailed tests)

In addition to the main independent variable of this study (level of self-directedness), the correlation analysis (the correlation matrix) also shows relationships between some of the independent/control variables and the outcome variables. First, as seen, computer knowledge is positively associated with change in support for non-traditional policing ($r=.08$, $p<.05$), change in support for COP ($r=10$, $p<.01$), perceived learning level ($r=13$, $p<.01$), and satisfaction ($r=11$, $p<.01$). The second variable that has an association with the outcomes of the online COP training program is internet accessibility. This variable is positively correlated with change in orientation to COP ($r=.07$, $p<.05$), change in support for COP ($r=.10$, $p<.01$), change in perceived problem solving capability ($r=.08$, $p<.05$), perceived learning level ($r=.13$, $p<.01$), and satisfaction ($r=.12$, $p<.01$). The third variable, age, is only positively associated with change in perceptions of officers on police-public relations ($r=.08$, $p<.05$).

The other variable that is associated with some of the outcome variables is gender of the officers (1=male). Table 10 demonstrates that change in support for non-traditional policing and change in support for traditional policing are more likely for female police officers at the end of the online training program (for both outcome variables $r=-.07$, $p<.05$). However, bivariate results also indicate that female police officers are less likely to be satisfied with the online training program compared with male officers ($r=.10$, $p<.01$). The other predictor variable that has significant correlations with some of the outcome variables is current assignment of the officers (1=COP related units). As seen, officers working in COP related units are more likely to change their support for COP and their perceived problem solving capability at the end of the training program (for both outcome variables $r=.11$, $p<.01$). Those officers working in COP related units are

also more likely to learn in the online COP training program ($r=.18$, $p<.01$) and they are more likely to be satisfied with the program compared with officers working in other units ($r=.17$, $p<.01$). The last variable having correlation with one of the outcome variable is logged department size. There is a positive relationship between department size in which officers are working and change in their perceived problem solving capability at the end of the training program.

Before the multivariate analyses, it is also important to address the multicollinearity issue. Multicollinearity is a serious statistical problem for multivariate (or multiple) regression analysis. This problem exists "whenever an independent variable is highly correlated with one or more of the other independent variables in a multiple regression equation" (M. P. Allen, 1997, p. 176). Multicollinearity is a problem because it undermines the significance of the regression coefficient of an independent variable through causing large standard error for that coefficient and thereby making the confidence interval for the coefficient very wide and making the t-statistic for the significance test very small (M. P. Allen, 1997; Berry & Feldman, 1990). Commonly used test for inspection of multicollinearity is the bivariate correlation and its matrix. Some indicate that multicollinearity is not a problem when the correlation coefficient does not exceed the cutoff value of .80 (Berry & Feldman, 1990). Some others indicate that bivariate correlation of .70 or more is an indicator of collinearity (Fidell & Tabachnick, 2003). As demonstrated in Table 10, none of the independent and control variables are highly correlated with any other. The biggest correlation coefficient is between computer knowledge and internet accessibility ($r=.45$), but it is not big enough to say that this correlation may cause any collinearity problem. However, it is clear that

inspection of the correlation matrix is limited and does not uncover a linear combination of variables. Therefore, in addition to VIF (Variance Inflation Factors) and Tolerance, multicollinearity diagnostics (especially collinearity index and variance proportions) that measures linear dependency and that can help us to understand if there is linear combination in data is examined in the following multivariate analysis section.

5.3. MULTIVARIATE ANALYSIS

Based on the theoretical claim of the PRO model and the literature related to online learning, in order to test the hypotheses of the study and to understand what predicts the outcomes of the online COP training program, eight different models were estimated and analyzed. Two of these models investigate the impact of the independent and control variables[75] on perceived learning level of officers in the training program and their satisfaction with the online COP training program. The remaining six models investigate the impact of the same independent and control variables on gain related variables, such as change in support for non-traditional policing, change in support for traditional policing, change in orientation to COP, change in support for COP, change in perception on police-public relations, and change in perceive problem solving capability. Moreover, in order to explore problems that compromise the regression analyses and to determine whether certain assumptions appear reasonable, regression diagnostics were applied for each model. Table 11 and Table 12 present the results of Ordinary Least

[75] These variables are level of self-directedness, computer knowledge, accessibility, previous experience in online learning, age, gender, education level, previous experience in COP training, rank, assignment (COP related or not), and logged department size.

Squares (OLS) regression analyses for these eight models. Whereas Table 11 focuses on perceived learning level and satisfaction, Table 12 focuses on gain related outcomes.

Table 11: Regression of Perceived Learning Level and Satisfaction on the Independent Variables (N=872) [a]

	Model 1 Perceived Learning Level	***Model 2*** Satisfaction
Variable	**B (β)**	**B (β)**
Constant	7.147 (---)	3.734 (---)
Level of Self-Directedness	.050 (.199)***	.058 (.221)***
Computer Knowledge	.124 (.064)	.118 (.057)
Accessibility	.383 (.078)*	.243 (.047)
Pre-Experience in Online Learning	-.079 (-.007)	-.334 (-.029)
Age	.015 (.026)	.013 (.021)
Gender	1.086 (.075)*	1.519 (.100)**
Education Level	-.056 (-.011)	-.069 (-.013)
Pre-Experience in COP Training	-.201 (-.021)	-.090 (-.009)
Rank	.623 (.061)	.385 (.036)
Assignment	.921 (.141)***	.915 (.133)***
Department Size (ln)	.141 (.041)	-.010 (-.003)
R^2	.099	.097
F	8.595***	8.438***

[a] In this table "B" refers to regression coefficient, and "β" refers to standardized slope coefficient.
*p<.05; **p<.01; ***p < .001

In the first model, an OLS regression model was estimated by regressing perceived learning level of the officers on all independent and control variables. In terms of diagnostics, first, availability of any influential case(s) that is defined as "any case that significantly alters the value of a regression coefficient whenever it is deleted from an analysis" (M. P. Allen, 1997, p. 171) was checked. Although there were a few statistical methods for identifying influential cases (e.g. examining leverage known as hat values,

examining discrepancies known as studentized residuals, and examining DFFITS), for this study Cook's Distance that is known as Cook's D and that is a multiplicative function of both discrepancy and leverage of each case was examined (M. P. Allen, 1997; Fox, 1991). Regarding the big sample size, the scatter plot of the dependent variable (perceived learning level) against Cook's D was examined closely to be able to identify values of D_i that are substantially larger than the rest (Fox, 1991).[76] Cook's D values for this model ranged from 0 to .05 and the scatter plot showed that three cases with Cook's D values bigger than .02 seemed different than the rest. However, because exclusion of those cases did not change the results (or coefficients) dramatically, they were retained in the analysis.

Secondly, multicollinearity among the independent variables was checked (R. Bachman & Paternoster, 2004). First, Tolerance and VIF values were examined.[77] For both values were very close to 1 (whereas the VIF values ranged from 1.03 to 1.38, the tolerance values ranged from .723 to .965). Therefore, it can be said that there were no evidence for multicollinearity. Collinearity diagnostics also supported the absence of multicollinearity.[78] [79]

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[76] There are some suggestions about the value of Cook's D; whereas some suggest that "values of D_i in excess of 0.5 may need to be examined, and values of D_i in excess of 1.0 could well be problematic" (Berk, 2004, p. 160), some suggest cutoff points (such as 4/(n-k-1) or 4/n) for identifying problematic cases (Fox, 1991). However, examination of values of D_i substantially larger than the rest is generally advised (Allen, 1997; Fox, 1991).

[77] "The strength of the linear relationships among the independent variables is measured by... the tolerance" (Norusis, 2006, p. 533) which is formalize with $1\text{-}R^2$. The VIF is the reciprocal of the tolerance; that is, $1 / (1\text{-}R^2)$. To be able to decide absence of multicollinearity, the expectation is that both VIF and Tolerance close to 1.0. As a rule of thumb, any VIF of 10 or more can be accepted as evidence of serious multicollinearity (Cohen, Cohen, West, & Aiken, 2003).

[78] As a rule of thumb, condition index greater than 30 refers to the fact that at least two variance proportions for independent variables greater than .50 and thereby, refers multicollinearity (Fidell &

The other assumptions of OLS regression were also checked. First of all, to able to conduct linear regression we should assume that the relationship between the dependent variable and independent variables is linear (Chen, Ender, Mitchell, & Wells, 2003). To determine violation of this assumption partial-regression plots (Chen et al., 2003; Fox, 1991) were examined, but any substantive non-linearity was not observed. The other assumption, assumption of independence, indicate that the errors related to one observation are not correlated with any other observation's errors (Chen et al., 2003); that is, "value of one observation is in no way related to the value of another observation" (Norusis, 2006, p. 509). The suggested test to understand if this assumption is violated is the Durbin-Watson test (Chen et al., 2003; Norusis, 2006).[80] Because the value of Durbin-Watson test for the model 1 is 2.02 (that is, it is almost 2), we can say that the errors associated with one observation were not correlated with the errors of any other observation and the independency assumption was not violated. In terms of the normality assumption indicating that "the error term is normally distributed" (Berry, 1993, p. 81), to detect large departures from normality, a visual inspection of graphs of regression residuals is suggested (Berry, 1993).[81] For this study, the skewness and kurtosis, histogram, and Q-Q plot of residuals were examined (Chen et al., 2003; Norusis, 2006). For model 1, skewness and kurtosis of residuals were between -2 and +2 (skewness=-

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Tabachnick, 2003). In this study, although the condition index was 62.560, none of the variables in the collinearity index row had variance proportion greater than .50 (proportions range from 0 to .38).

[79] Because same predictor variables were used for each model of this study, multicollinearity related results were also same for the other models.

[80] For Durbin-Watson test, the value ranges from 0 to 4 and if there is no correlation between residuals this value should be 2. As a rule of thumb, if the Durbin-Watson value between 1.5 and 2.5, you should not worry about violation of assumption of independence (Norusis, 2006).

[81] For data with large sample size, statistical test for normality (e.g. Kolmogorov-Smirnov and Shapiro-Wilk) is not suggested because "if your sample size is large, the tests of normality may lead you to reject the normality assumption bases on small departures that won't affect the regression analysis" (Norusis, 2006, p. 503)

.956 kurtosis=1.593). Histogram and Q-Q plot were also normal. Based on these results, the residual from this regression model appeared to conform to the assumption of normality.

The last assumption tested was homoscedasticity indicating that the variance of the residuals (error term) is constant for all values of the independent variable(s) (M. P. Allen, 1997; Berry, 1993). Violation of this assumption is called "heteroscedasticity". "This assumption can be checked by visual examination of a plot of the standardized residuals (the errors) by the regression standardized predicted value (*by the predicted values*)...When the plot of residuals appears to deviate substantially from normal, more formal tests for heteroscedasticity should be performed" (italics were added, Osborne & Waters, 2002, p. 4). Because it is suggested frequently (Fox, 1991; Osborne & Waters, 2002), for this study, first, graphical method (scatter plot of standardized residuals vs. the predicted values) was examined and then formal statistical tests were applied.[82] For the model 1, examination of the scatterplot did not show any substantial deviation from normal or pattern evidence for heteroscedasticity. White's test (X^2=68.99, p=.58) and Breusch-Pagan / Cook-Weisbert test also supported homoscedasticity of the residuals (X^2=1.29, p>X^2=.26).

In terms of interpretation of the regression analysis, as demonstrated in Table 11, 10 percent of the variance in perceived learning level of officers is significantly explained by the first model (R^2=.099, F=8.595, p<.001). This model supports the main hypothesis 1 regarding the effect of the self-directedness level of police officers on their learning

[82] Two tests applied to check heteroscedasticy in this study were White's test (Cameron & Trivedi's decomposition of IM-test) and Breusch-Pagan test. For both tests, the null hypothesis was residuals were homogenous. Small p-values (p<.05) led to reject the null hypothesis.

level in the online learning program. As expected there is a significant positive relationship between self-directedness level of officers and their perceived learning level in the online training program holding constant the other independent and control variables in the model (B=.050, p<.001). This means that one unit increase in officers' self-directedness level leads to a .05 increase in their perceived learning level in the online training program controlling for the other predictors in the model. In addition to the level of self-directedness, three other explanatory variables (accessibility, gender, assignment) appear significantly related with the perceived learning level of the officers. In terms of accessibility, there is a significant positive relationship between internet accessibility of the officers and their perceived learning level in the training program (B=.383, p<.05). In other words, controlling the other variables in the model, one unit increase in the extent of officer's internet accessibility leads to a .383 increase in perceived learning level of the officers. Table 11 shows that gender (Male=1) also significantly related with perceived learning level of the officers (B=1.086, p<.05). This would be interpreted as male police officers' perceived learning level was 1.086 more than female police officers' perceived learning level in the online COP training program. The last variable significantly related with perceived learning level is assignment of the police officers during the training program (1=COP related unit, B=.921, p<001). As demonstrated, police officers working in the COP related units had .921 more perceived learning levels than officers working in the non-COP related units holding the other variables constant in the model. Finally, relying on the results, the relative importance of the explanatory variables can be also understood through comparing their respective beta weights (or standardized slope coefficients) (R. Bachman & Paternoster, 2004). As

shown by Table 11, level of self-directedness has the largest standardized slope coefficient (β=.199); that is, this variable has the strongest influence on the perceived learning level of the officers in the model. The second most important variable is assignment of the officers with beta weight of .141.

In the second model, an OLS regression model was estimated by regressing satisfaction of the officers with the online COP training program on all independent and control variables. In terms of diagnostics, first, availability of any influential case(s) was detected through examination of Cook's D values. There was no evidence that any case had a dramatic effect on the regression coefficients.[83] In addition, any violation of assumptions of linearity, independence,[84] normality, [85] and homoscedasticity[86] was not observed. The second model significantly explains approximately 10 percent of variance in satisfaction of the officers with the online COP training program (R^2=.097, F=8.438, p<.001). This model supports the main hypothesis 2 regarding a positive effect of self-directedness level of police officers on their satisfaction with the online training program. As expected, Table 11 shows that there is a significant positive relationship between self-directedness level of officers and their satisfaction holding constant the other independent and control variables in the model (B=.058, p<.001). This means that one unit increase in

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[83] Five cases that have Cook's D value seemed different than others (their Cook's D values bigger than .016, but smaller than .025) was observed. However, because removing these cases did not cause any significant change in any of the regression coefficient, they were retained in the analysis.

[84] The value of Durbin-Watson test was 1.85.

[85] Values for skewness and kurtosis were acceptable (skewness=-.963 kurtosis=.924). Histogram and Q-Q plot were also seen normal.

[86] Examination of the scatterplot of standardized residuals by the predicted values did not show any substantially deviation from normal or pattern evidence for heteroscedasticity. Although Breusch-Pagan / Cook-Weisbert test rejected the null hypothesis of constant variance (X2=3.93, p=.047), White's test (Cameron & Trivedi's decomposition of IM-test) (X2=59.45, p=.85) supported homoscedasticity of the residuals.

officers' self-directedness level leads to a .06 increase in their satisfaction with the online training program controlling for the other predictors in the model. In addition to the level of self-directedness, two more explanatory variables (gender and assignment) appear significantly related with the satisfaction of the officers. In terms of gender, as demonstrated, male police officers' satisfaction was 1.519 more than female police officers' satisfaction with the online training program (B=1.519, p<.01). Moreover, police officers working in the COP related units had .915 more satisfaction than officers working in the non-COP related units holding the other variables constant in the model (B=.915, p<.001). Finally, like the first model, level of self-directedness has the largest standardized slope coefficient (β=.221); that is, this variable has the strongest influence on the satisfaction of the officers with the training program in the model.

The remaining six models are related to gain scores of the officers (or change in attitudes of the officers toward COP) at the end of the online COP training program. Table 12 below presents the results of Ordinary Least Squares (OLS) regression analyses for these models. As seen in the table, none of the sub-hypotheses of the main hypothesis 3 (H3a, H3b, H3c, H3d, H3e, H3g) is supported by these six models.

Table 12: Regression of Gain Related Outcomes on the Independent Variables (N=848)[a]

Variable	*Model 3* Change in Support for NTP B (β)	*Model 4* Change in Support for TP B (β)	*Model 5* Change in Orientation to COP B (β)	*Model 6* Change in Support for COP B (β)	*Model 7* Change in Perception on PBR B (β)	*Model 8* Change in Perceived PSC B (β)
Constant	1.327 (---)	-2.479 (---)	-2.056 (---)	-2.794 (---)	-.088 (---)	.305 (---)
Level of Self-Directedness	-.013 (-.050)	.005 (.019)	-.016 (-.048)	-.023 (-.075)*	-.017 (-.054)	-.026 (-.163)***
Computer Knowledge	.146 (.072)	-.069 (-.034)	.136 (.051)	.235 (.099)*	.150 (.062)	.077 (.062)
Accessibility	.174 (.034)	.120 (.023)	.378 (.057)	.506 (.085)*	.189 (.031)	.244 (.079)*
Pre-Experience in Online Learning	-.236 (-.021)	-.353 (-.031)	-.323 (-.022)	-.218 (-.016)	-.567 (-.041)	-.585 (-.084)*
Age	.020 (.033)	.032 (.052)	.019 (.024)	.061 (.086)*	.081 (.111)**	.021 (.058)
Gender	-1.088 (-.072)*	-1.247 (-.082)*	.425 (.022)	-.423 (-.024)	-.351 (-.019)	-.072 (-.008)
Education Level	.153 (.030)	.174 (.034)	.152 (.023)	-.196 (-.033)	.140 (.023)	.184 (.060)
Pre-Experience in COP Training	-.559 (-.055)	.271 (.026)	.260 (.019)	.088 (.007)	-.498 (-.041)	.164 (.027)
Rank	-.330 (-.031)	.587 (.055)	.709 (.051)	.734 (.060)	-.199 (-.016)	.228 (.036)
Assignment	.210 (.031)	.360 (.053)	.907 (.102)**	.837 (.106)**	.276 (.034)	.456 (.111)**
Department Size (ln)	-.021 (-.006)	.075 (.021)	-.028 (-.006)	.193 (.046)	-.104 (-.024)	.086 (.039)
R^2	.020	.016	.021	.046	.020	.056
F	1.531	1.250	1.661	3.678***	1.585	4.499***

[a] In this table "B" refers to regression coefficient, and "β" refers to standardized slope coefficient. *p<.05; **p<.01; ***p < .001

In terms of the model 3, this model cannot explain any significant variance in the dependent variable (change in support of officers for non-traditional policing) (R^2=.02, F=1.531, p>.05).[87] However, one variable (gender) in the model has a significant regression coefficient. This indicates that gender has an effect on change in support for non-traditional policing (B=-1.088, p<.05). This would be interpreted as female police officers had 1.09 more change in their support for non-traditional policing than male police officers at the end of the online training program.

Like the 3rd model, model 4 cannot explain any significant variance in the dependent variable (change in support of officers for traditional policing) (R^2=.016, F=1.250, p>.05).[88] However, similar to the third model, gender has a significant regression coefficient. The significance of the regression coefficient of gender indicates that this variable has an effect on change in support for traditional policing (B=-1.247, p<.05). This would be interpreted as female police officers had 1.25 more change in their support for traditional policing than male police officers at the end of the online training program. As seen in Table 12, for model 5, the OLS regression model is estimated by regressing the dependent variable (change in orientation of officers to COP) on all

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87 Assumptions of OLS regression were checked for the model 3 and any violation was not observed: Specifically, for independence, Durban-Watson test was 1.877; for normality, skewness and kurtosis were acceptable (skewness=-.066 kurtosis=.859) and histogram and Q-Q plot were also seen normal; for homoscedasticity, the scatterplot of standardized residuals by the predicted values did not show any substantially pattern evidence for heteroscedasticity, and Breusch-Pagan / Cook-Weisbert test also supported homoscedasticity of the residuals (X2=1.02, p>X2=.31). In addition, observation of the Cook's D values did not show any influential case.

88 Assumptions of OLS regression were checked for the model 4 and any violation was not observed: Specifically, for independence, Durban-Watson test was 1.923; for normality, skewness and kurtosis were acceptable (skewness=-.202 kurtosis=1.689) and histogram and Q-Q plot were also seen normal; for homoscedasticity, the scatterplot of standardized residuals by the predicted values did not show any substantially pattern evidence for heteroscedasticity, and White's test (X2=49.68, p=.98) and Breusch-Pagan / Cook-Weisbert test also supported homoscedasticity of the residuals (X2=2.35, p>X2=.13). In addition, observation of the Cook's D values did not show any influential case.

independent and control variables. This model does not explain any significant variance in change in officers' orientation to COP at the end of the training program (R^2=.021, F=1.661, p>.05).[89] However, one of the independent variable (assignment) has significant effect on the dependent variable (B=.907, p<.01). That is, police officers working in the COP related units had .975 more change in their orientation to COP than officers working in the non-COP related units at the end of the online training program holding the other variables constant in the model.

In the sixth model, change in officers' direct support for COP at the end of the training program was regressed on all independent and control variables of the study.[90] In contrast to the previous gain related models (model 3, 4, and 5), this model did significantly explain approximately five percent of variance in the dependent variable (change in support for COP) (R^2=.046, F=3.678, p<.001). This model shows that five variables are significantly related to the dependent variable (level of self-directedness, computer knowledge, accessibility, age, and assignment). Opposite of expectation

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[89] In terms of model 5, any violation of assumptions of OLS was not observed: Specifically, for independence, Durban-Watson test was 1.986; for normality, skewness and kurtosis were acceptable (skewness=-.027 kurtosis=1.599) and histogram and Q-Q plot were also seen normal; for homoscedasticity, the scatterplot of standardized residuals by the predicted values did not show any substantially pattern evidence for heteroscedasticity, and White's test (X2=62.18, p=.79) and Breusch-Pagan / Cook-Weisbert test also supported homoscedasticity of the residuals (X2=1.60, p>X2=.21). In addition, observation of the Cook's D values did not show any influential case.

[90] Observation of the Cook's D values of the model 6 showed that one case with Cook's D value appeared different than others. Therefore, to understand its effect, this case was removed. Because removing this case ccould cause chagne in coefficient of one variable (coefficient of access was not seem significant anymore), I went to the data and checked this case. However, there was no any strange issue to be able to justify removing that case from the analysis. Therefore, it was retained in the analysis. Moreover, assumptions of OLS regression were also checked for the model 6 and any violation was not observed: Specifically, for independence, Durban-Watson test was 2.50; for normality, skewness and kurtosis were acceptable (skewness=-.302 kurtosis=.920) and histogram and Q-Q plot were also seen normal; for homoscedasticity, the scatterplot of standardized residuals by the predicted values did not show any substantially pattern evidence for heteroscedasticity and White's test (X2=47.52, p=.99) and Breusch-Pagan / Cook-Weisbert test also supported homoscedasticity of the residuals (X2=2.35, p>X2=.13).

indicated in H3d, there is a negative relationship between level of self-directedness of the officers and change in their direct support for COP at the end of the training program (B=-.023, p<.05). That is, one unit increase in the level of self-directedness of officers led to a .023 decrease in change in their support for COP at the end of the training program. However, Table 12 demonstrates that the other four variables are positively related to this outcome. In terms of computer knowledge, as computer knowledge of the officers increased for one unit, change in their support for COP also increased by .24 holding the other variables constant in the model (B=.235, p<.05). In terms of internet accessibility, results shows that one unit increase in officers' internet accessibility during the training program increased change in their support for COP by .506 at the end of the training program (B=.506, p<.05). A similar result is also observed for age; that is, one year increase in officers' age led to a .061 change in their support for COP controlling the other variables (B=.061, p<.05). Finally, the variable that has the strongest effect on change in officers' support for COP is assignment (β=.106). As demonstrated in the table, police officers working in the COP related units had .837 more change in their orientation to COP than officers working in the non-COP related units at the end of the online training program controlling the other variables in the model (B=.837, p<.01).

The other regression model, model 7, is focused on the dependent variable, change in perception of officers on police-public relations.[91] However, this model does

[91] Assumptions of OLS regression were checked for the model 7 and any violation was not observed: Specifically, for independence, Durban-Watson test was 1.985; for normality, skewness and kurtosis were acceptable (skewness=-.067 kurtosis=1.048) and histogram and Q-Q plot were also seen normal; for homoscedasticity, the scatterplot of standardized residuals by the predicted values did not show any substantially pattern evidence for heteroscedasticity, and White's test (Cameron & Trivedi's decomposition of IM-test) (X2=86.99, p=.11) and Breusch-Pagan / Cook-Weisbert test also supported homoscedasticity of the residuals (X2=.01, p>X2=.90). In addition, observation of the Cook's D values did not show any influential case.

not explain any significant variance on this dependent variable (R^2=.020, F=1.585, p>.05). In contrast, one variable of this model (age) has a significant regression coefficient indicating that there is a positive relationship between officers' age and change in their perception on police-public relations at the end of the training program controlling the other variables in the model (B=.081, p<.01).

Finally, in the last model, model 8, the dependent variable (change in perceived problem-solving capability) was regressed on all independent and control variables.[92] This model significantly explains approximately 6 percent of variance in change in officers' perceived problem solving capability at the end of the training program (R^2=.056, F=4.499, p<.001). It has four variables with significant regression coefficients (level of self-directedness, computer knowledge, accessibility, age, and assignment). Like the sixth model, in this model, there is also a negative significant relationship between level of self-directedness and change in perceived problem-solving capability (B=-.026, p<.001). This result is opposite of the expectation informed by H3f. According to this result, it would be interpreted that one unit increase in officers' level of self-directedness led to a .026 decrease in change in their perceived problem-solving capability at the end of the training program. The other variable that is significantly related to the outcome of the 8th model is accessibility. This variable has a positive significant association (B=.244, p<.05) indicating that as officers internet accessibility increased during the training

[92] For this final model, any violation of OLS regression assumptions was not also observed: Specifically, for independence, Durban-Watson test was 2.069; for normality, skewness and kurtosis were acceptable (skewness=-.121 kurtosis=1.732) and histogram and Q-Q plot were also seen normal; for homoscedasticity, the scatterplot of standardized residuals by the predicted values did not show any substantially pattern evidence for heteroscedasticity, and White's test (Cameron & Trivedi's decomposition of IM-test) (X2=68.08, p=.61) and Breusch-Pagan / Cook-Weisbert test also supported homoscedasticity of the residuals (X2=1.89, p>X2=.17). In addition, observation of the Cook's D values did not show any influential case.

program for one unit, change in their perceived problem solving capability also increased by .244. Another significant predictor is previous-experience in online learning (1=Yes "having previous experience"). Surprisingly, opposite of the other 7 models, this variable is only significant in this model (B=-.585, $p<.05$) and its coefficient indicates that police officers who did not have any experience with online training previously had .585 more change in their perceived problem solving capability than officers who had previous experience in online learning controlling the other variables in the model. Finally, assignment of the officers is also significant in this model (B=.456, $p<.01$). The coefficient for this variable shows that police officers working in the COP related units had .456 more change in their perceived problem-solving capability than officers working in the non-COP related units at the end of the online training program holding the other variables constant in the model.

To sum up, the multivariate OLS regression analyses showed that two of the three main hypotheses (H1 and H2) were supported in this study. That is, according to the results, there are positive relationships between level of self-directedness of officers and their perceived learning level and their satisfaction with the online training program. However, any of the gain related sub-hypotheses of H3 were not supported; the results failed to show a positive relationship between self-directedness of officers and change in their attitudes toward COP. Moreover, according to the OLS regression analyses, some other variables also appeared as significant predictors of the outcomes of the online training program (e.g., accessibility, gender, and assignment). Given these expected and unexpected findings, further discussions of these results and their implications are provided in the following chapter.

5.4. SUPPLEMENTARY ANALYSIS FOR POSSIBLE INTERVENING EFFECT OF SATISFACTION BETWEEN SELF-DIRECTEDNESS LEVEL AND LEARNING

After examination of the analysis and results, there may be a question about the possible intervening effect of satisfaction. Therefore, to address this question, satisfaction was considered as an intervening variable. As demonstrated in Table 13 below, perceived learning level of officers was regressed on two models.

Table 13: Examination of Intervening Effects of Satisfaction and Perceived Learning Level (N=872)[b]

	Model 1	***Model 9***	***Model 2***	***Model 10***
	Perceived Learning Level	Perceived Learning Level	Satisfaction	Satisfaction
Variable	**β**	**β**	**β**	**β**
Constant	---	---	---	---
Perceived Learning Level	---	---	---	.741***
Satisfaction	---	.739***	---	---
Level of Self-Directedness	.199***	.036	.221***	.073**
Computer Knowledge	.064	.021	.057	.010
Accessibility	.078*	.043	.047	-.011
Pre-Experience in Online Learning	-.007	.014	-.029	-.023
Age	.026	.011	.021	.002
Gender	.075*	.001	.100**	.044*
Education Level	-.011	-.001	-.013	-.005
Pre-Experience in COP Training	-.021	-.014	-.009	.007
Rank	.061	.034	.036	-.009
Assignment	.141***	.043	.133***	.029
Department Size (ln)	.041	.043	-.003	-.033
R^2	.099	.592	.097	.592
F	8.595***	104.078***	8.438***	103.760***

[b] In this table "β" refers to standardized slope coefficient. *p<.05; **p<.01; ***p < .001

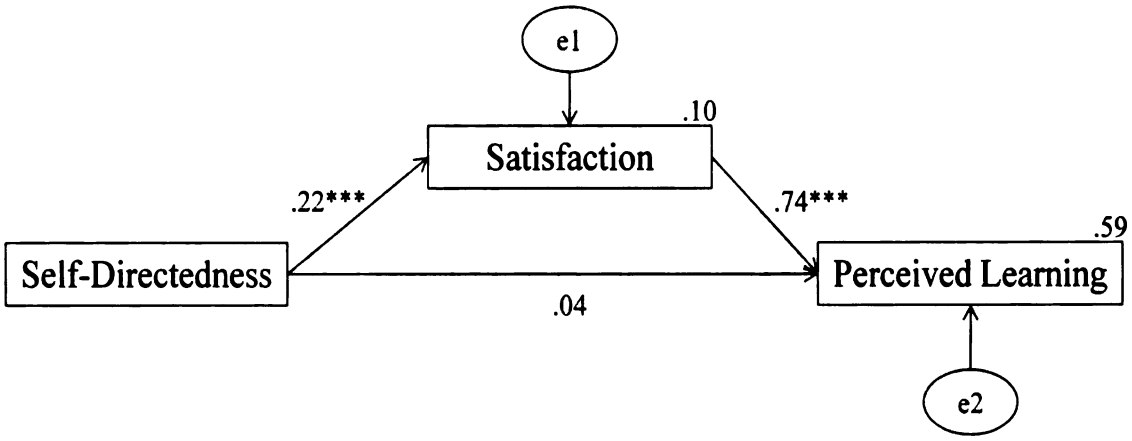
The first model is model 1 that was discussed above and does not include satisfaction. In the second model (model 9), satisfaction was added to the model. As seen, whereas model one explains approximately 10 percent variance in perceived learning level of officers (R^2=.099, F=8.595, p<.001) and has four variables (including level of self-directedness) with statistically significant coefficients, model 9 explains approximately 60 percent of variance in perceived learning level (R^2=.592, F=104.078, p<.001).

However, after addition of the satisfaction into the model, the four variables that have significant coefficients in the model 1 no longer seem significant; level of self-directedness also does not have significant coefficient any more. This may be interpreted that addition of satisfaction into the model removes the effect of level of self-directedness on perceived learning level.

Here, we can assess whether satisfaction is an intervening variable and whether self-directedness level has an indirect effect on perceived learning level over satisfaction of the officers because, as demonstrated in model 2, self-directedness level has a positive significant effect on satisfaction holding constant the other variables in the model (β=.221, p<.001). Relying on the OLS regression results presented in Table 13, Figure 4 shows the path analysis of the relationship among these three variables controlling the other variables.[93]

[93] These path analyses were also conducted through SPSS AMOS, and same results were obtained.

Figure 4: Examination of possible intervening effect of satisfaction between self-directedness and perceived learning level[a]



[a] For this analysis, all independent and control variables of the study (other than the self-directedness level) were controlled.
***p<.001

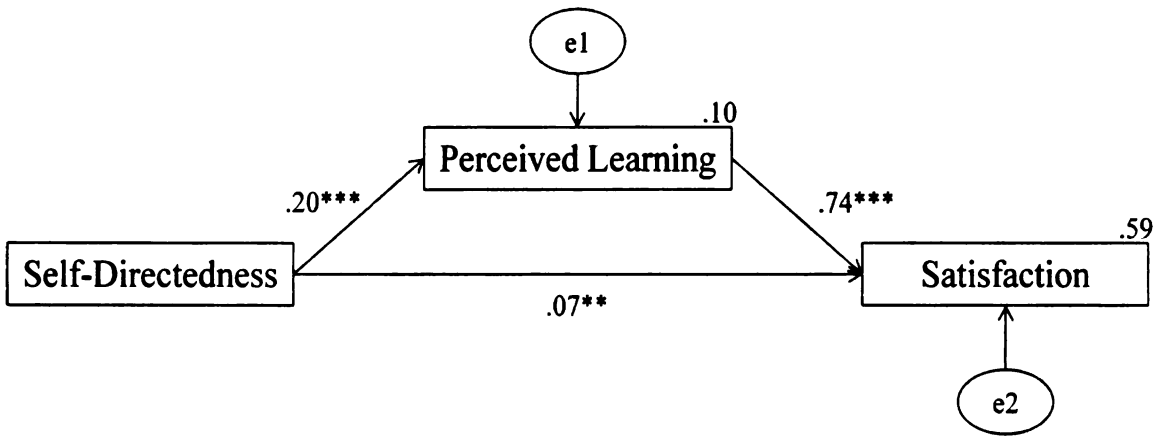
As demonstrated in Figure 4, the direct effect of self-directedness on perceived learning level was very small (very close to zero) when controlling for satisfaction and the other variables. However, its indirect effect on perceived learning level through satisfaction is .16 [94] whereas its total effect is .20. This means that overall, self-directedness has a moderate effect on perceived learning level, but most of this effect is through satisfaction. This results support the idea of the intervening effect of satisfaction between self-directedness and perceived learning.

However, there is a problem; we do not know the time order between satisfaction and perceived learning level. That is, if satisfaction occurred before learning we can accept its intervening influence. However, there is a possibility that the officers were satisfied with the training program because they felt they learned in it. In this situation we

[94] The indirect effect was calculated through multiplication of beta of the direct effect of self-directedness on satisfaction and beta of the direct effect of satisfaction on perceived learning level (.22*.74=.16)

can talk about the intervening effect of learning; that is, self-directedness increased officers' perceived learning level, then high perception in learning made them satisfied with the online training program.

Figure 5: Examination of possible intervening effect of perceived learning level between self-directedness and satisfaction[a]



[a] For this analysis, all independent and control variables of the study (other than the self-directedness level) were controlled.
**p<.01 ***p<.001

As seen in Figure 5, whereas the direct effect of self-directedness on satisfaction is .07, the indirect effect is .15 (that is .20*.74), and total effect is .22 (.15+.07). This also means that overall, self-directedness has a moderate effect on satisfaction, but most of this effect is thorough perceived learning level. This result also supports the idea of intervening effect of learning between self-directedness and perceived learning. However, because it is difficult to discern the time order between satisfaction and perceived learning, it is difficult to accept this idea too. Finally, it can be said that no matter which variable came first, they were both outcomes of the training program. Therefore, for this study, any intervening effect of one of them on the other was not taken into account.

CHAPTER 6

DISCUSSION AND CONCLUSION

In this study, the main interest is the research question: "Is there any relationship between police officers' self-directedness and the outcomes of the online COP training program in which they participated?" To be able find the answer for this research question three main outcomes of the online COP training program (perceived learning level of officers, their satisfaction with the training program and gain or change in their attitudes toward COP at the end of the program) were identified and eight hypotheses were suggested. This study examines whether there is any relationship between self-directedness level of the police officers and these outcomes of the online COP training program. It also helps us to determine what other factors (other than self-directedness level) predict outcomes of the online COP training program in Turkish National Police context. In addition, this study also provides an opportunity to figure out if there was any gain of officers in terms of change in their attitudes toward COP at the end of the training program, and to what extent they learned and were satisfied with the online training program.

In this chapter the research question focusing on the relationship between self-directedness and the outcomes of the online COP training program and predicting these outcomes are discussed based on the results presented in the previous chapter and the limited previous research related to this issue. Moreover, the conclusion and implication of the results, limitations of the study, and recommendations for future research are presented.

6.1. DISCUSSION

As mentioned above, two of the main hypotheses of this study (H1 and H2) were focusing on the relationship between self-directedness level of officers and two of the main outcomes of the online COP training program (perceived learning level and satisfaction). In the literature, there is a claim indicating that outcomes of a self-directed learning process (e.g. success, degree of learning, etc.) depends on degree of self-directedness of the learners or their readiness for self-directed learning (Durr et al., 1996; Fisher et al., 2001; Grow, 1991; O'Shea, 2003; Oddi, 1986). The theoretical PRO model guiding this research also proposes that there should be balance and harmony between learners' self-direction and self-directed learning environment. That is, if there is not any balance and harmony between the self-directedness level of learner and the learning process, difficulties and frustration arise and success in the learning process will be affected negatively (Brockett & Hiemstra, 1991).[95] Similarly, some studies focusing on the relationship between self-directedness and success in self-directed learning environments showed that there was a positive relationship between these two concepts (Haggerty, 2000; Harriman, 1990; Morris, 1995; Savoie, 1979; Stewart, 2007). However, the scientific research focused on online learning as a self-directed learning environment failed to show any significant relationship between the self-directedness level of the learners and their success (Corbeil, 2003; Doherty, 2000; Pachnowski & Jurczyk, 2000).

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[95] Explaining this situation, Brocket and Hiemstra (1991) indicates that individuals who enter a learning environment with a high self-directedness level are more likely to become disenchanted and frustrated if they are in a teacher-centered learning environment and if not given freedom. Similarly, individuals who enter a learning environment with low level of self-directedness and who seeks high level of guidance and direction are more likely to have similar feelings if they are in a self-directed learning environment (e.g. online learning) and if an active leadership role of learners is emphasized by the facilitator.

In contrast to previous research on online learning and self-directedness, the results of the first two models of this study[96] are consistent with previous research focusing on the relationship between self-directedness and outcomes of self-directed learning environment (e.g. learning, achievement, etc.) and finding a positive relationship between these concepts. That is, both bivariate correlation analyses and multivariate OLS regression analyses of this study showed that there is a significant positive relationship between the self-directedness level of the officers and their perceived learning level in the online COP training program and also their satisfaction with this online training program. This means that as the self-directedness level of a police officer increases, his/her perceived learning level and satisfaction with the online COP training program also increases. Results of these first two models also support H1 and H2. In addition, examination of the beta weights of the independent and control variables in the first two models reveals that self-directedness level of the police officers is the most important variable in terms of predicting perceived learning level and satisfaction in the online COP training program. These results mentioned above also provide support for the PRO model proposing a link between self-directedness and outcomes of self-directed learning environment. Because the online learning is a self-directed learning process (Gray, 1999; Ibrahim & Silong, 2000; McVay, 2000; Song & Hill, 2007), based on the PRO model, it was already expected that there would be a positive relationship between self-directedness and outcomes of the online COP training program, and this expectation is supported by the first two models.

[96] Dependent variables of these two models are perceived learning level and satisfaction.

On the other hand, the results presented in the previous chapter did not support the remaining gain related hypotheses (H3a, H3b, H3c, H3d, H3e, and H3f). That is, none of the remaining six models showed a significant positive relationship between self-directedness level of the officers and the outcome variables related to change in attitudes of officers toward COP holding constant the other independent and control variables in the models at the end of the online COP training program. However, for two models (model 6 and model 8), there is a significant negative relationship between officers' self-directedness level and change in their direct support for COP and also change in their perceived problem-solving capability, though this was opposite of the expectations indicated in the hypotheses. Statistically, this means that as officers' self-directedness level increases, change in their support for COP and change in their perceived problem-solving capability decreases.

There are several possible explanations of why there is no relationship or there are negative relationships between self-directedness level of the officers and their gain at the end of the training program, despite the fact that this variable is positively related with perceived learning and satisfaction. The clear and most satisfying explanation is related to methodological issues. As discussed in the validity and reliability part of this study, one of the important threats to internal validity for one-group pretest-posttest design is statistical regression (Campbell & Stanley, 1966; Cook & Campbell, 1979). Specifically, when respondents are classified into experimental groups at the pretest depending on their pretest scores, the statistical regression threat occurs. That is, when this situation happens, "high pretest scores will score relatively lower at the posttest and low pretest scores will score higher" (Cook & Campbell, 1979, p. 52). Here, attribution of any

change or gain to an intervention or treatment could be in error because of the fact that this might be statistical regression. Cook and Campbell (1979, p. 52) emphasize that "statistical regression (1) operates to increase obtained pretest-posttest gain scores among low pretest scores, since this group's pretest scores are more likely to have been depressed by error; (2) operates to decrease obtained change scores among persons with high pretest scores, since their pretest scores are likely to have been inflated by error..." Although there was not any of this kind of classification during data collection of this study, close examination of the relationship between self-directedness level and gain scores show that a negative relationship (or no relationship) might be due to statistical regression. Let's explain this.

In the univariate analysis part, it is mentioned that the pretest-mean score of each variable related to attitudes toward COP is high (above the average). When we examine what predicts this pretest scores, as it is seen in Table 14, level of self-directedness is significantly and positively correlated with all of the attitudes related variables.

Table 14: Bivariate Correlations between Self-Directedness Level and Pre/Post Attitudes toward COP

	Pre-Support for NTP	Pre-Support for TP	Pre-Orientation to COP	Pre-Support for COP	Pre-Perception on PPR	Pre-Perceived PSC
Level of Self-Directedness	.256**	.213**	.385**	.349**	.151**	.532**
	.245**	.207**	.327**	.271**	.114**	.407**
	Post-Support for NTP	Post-Support for TP	Post-Orientation to COP	Post-Support for COP	Post-Perception on PPR	Post-Perceived PSC

Note: NTP=Non-traditional Policing, TP=Traditional Policing, COP= Community Oriented Policing, PPR=Police-public Relations, PSC=Problem Solving Capability;
Entries are Pearson Correlation Coefficient; **p<.01 (2-tailed tests)

We can go through one case, the outcome variable of perceived problem-solving capability, to understand how statistical regression causes this problem.[97] The mean value of this variable in pretest was high (mean=15.38); that is, the average of the officers felt themselves qualified in problem-solving before the training program. According to a multivariate OLS regression analysis, the most important predictor of this variable at the pretest is self-directedness level of the officers; there was a significant positive relationship holding constant some other predictor variables (B=.09, β=.518, $p<.001$, R^2=.28).[98] This relationship also seen in bivariate correlation analysis above (r=53). This means that as self-directedness level of the officers increase, their previous perception on their problem solving capability also increase, and magnitude of this relationship is almost strong. Here, we can also predict that the mean of this variable is high due to the officers who have high level of self-directedness. However, in the posttest, although the mean score of this variable increased (mean=15.67), the magnitude of the relationship between self-directedness level and perceived problem-solving capability decreased (r=.41). One of the explanations of this is that whereas some of the respondents who had high level self-directedness may have decreased their perception about problem-solving capability at the posttest, some other officers whose pre-intervention perception was low may have increased their post perception due to other factors (e.g., assigned unit, computer knowledge, etc). This is also supported by a multivariate OLS regression

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[97] This variable was selected because self-directedness level of the officers was significantly negatively related with change in this variable at the end of the training program.

[98] In this OLS regression analysis, previous perceived problem-solving capability was regressed on self-directedness level, education level, rank, pre-experience in COP training, gender, age, assigned current unit, and logged department size. Only two coefficients were significant (Self-directedness and gender); however, beta weight of self-directedness was quit high (β=.518) comparing with gender's (β=.06).

analysis.[99] Because of this decrease, although the relationship between self-directedness level of the officers and their perceived problem-solving capability is still positive, change in this variable is negative since the mean value of the posttest is smaller than the mean value of the pretest for the officers who have high level of self-directedness. This is what the statistical regression threat indicates. If the problem is related to high level pretest scores, controlling of the pretest scores can help to see the real relationship between self-directedness level of the officers and change in their perceived problem solving capability at the end of the training program. Table 15 presents 6 models including regression of each of the gain-related outcome on independent and control variables of this study and pretest score of each dependent variable as well.

Results of these analyses show that the relationship between level of self-directedness of the officers and change in their perceived problem-solving capability becomes positive and significant controlling the other variables and pretest scores of problem-solving capability (B=.025, β=.157, $p<.001$). This kind of relationships is also observed in the other models. That is, the relationship between self-directedness and other gain related variables (except change in perception on police-public relations) also become significant and positive. In addition, these results, presented in table 15, also support four of the six gain-related hypotheses (H3a, H3c, H3d, and H3f).[100]

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[99] In this OLS regression analysis, post perceived problem-solving capability was regressed on self-directedness level, computer knowledge, education level, rank, pre-experience in COP training, gender, internet accessibility, assigned current unit, and logged department size. In this analysis, whereas beta weight of self-directedness decreases (β=.379), the coefficients of two other variables became significant (current assigned unit, and logged department size).

[100] Although controlling the pretest scores leads the coefficients of self-directedness significant and positive in five gain related models, it causes small number of changes on coefficients of the other variables.

Table 15: Regression of Outcomes on Independent Variables Including Pretest Scores of Each Dependent Variable (N=848)[a]

	Gain (Change in Attitudes of Officers toward COP)					
	Model 11	***Model 12***	***Model 13***	***Model 14***	***Model 15***	***Model 16***
	Change in Support for NTP	Change in Support for TP	Change in Orientation to COP	Change in Support for COP	Change in Perception on PBR	Change in Perceived PSC
Variable	**B (β)**	**B (β)**	**B (β)**	**B (β)**	**B (β)**	**B (β)**
Pretest Score of Each DV	-.656 (-.608)***	-.567 (-.505)***	-.513 (-.504)***	-.566 (-.544)***	-.405 (-.455)***	-.582 (-.614)***
Level of Self-Directedness	.030 (.116)***	.034 (.131)***	.047 (.139)***	.030 (.099)**	.005 (.017)	.025 (.157)***
Computer Knowledge	.119 (.059)	-.111 (-.054)	.143 (.053)	.193 (.081)*	.138 (.056)	.111 (.090)**
Accessibility	.019 (.004)	.034 (.007)	.637 (.095)**	.512 (.086)*	.111 (.018)	.134 (.043)
Pre-Experience in Online Learning	.012 (.001)	-.231 (-.020)	-.568 (-.038)	-.297 (-.022)	-.735 (-.054)	-.434 (-.063)*
Age	.012 (.020)	.011 (.017)	.044 (.055)	.033 (.047)	.095 (.129)***	.011 (.029)
Gender	-.817 (-.054)	-.967 (-.064)*	1.042 (.053)	-.153 (-.009)	.516 (.029)	.223 (.024)
Education Level	-.063 (-.012)	-.004 (.000)	.172 (.026)	-.077 (-.013)	.194 (.032)	.192 (.063)
Pre-Experience in COP Training	-.368 (-.036)	.021(.002)	.207 (.015)	-.138 (-.012)	-.160 (-.013)	.245 (.040)
Rank	.029 (.003)	.596 (.056)	.990 (.071)*	.882 (.072)*	-.530 (-.042)	.293 (.046)
Assignment	.431 (.064)*	.298 (.044)	1.170 (.132)***	.976 (.124)***	.388 (.048)	.441 (.107)***
Department Size (ln)	-.031 (-.008)	.025 (.007)	-.109 (-.023)	.335 (.080)**	.033 (.008)	.149 (.068)*
R^2	.356	.257	.234	.307	.216	.325
F	38.49***	24.055***	21.294***	30.890***	19.208***	33.445***

Note: NTP=Non-traditional Policing, TP=Traditional Policing, COP= Community Oriented Policing, PPR=Police-public Relations, PSC=Problem Solving Capability, and DV=Dependent Variable

[a] In this table "B" refers to regression coefficient, and "β" refers to standardized slope coefficient. *p<.05; **p<.01; ***p < .001

It can be summarized that because of high level of self-directedness, some officers may have learned something related to problem-solving before the training program and during the pretest they may have assumed that they were highly qualified in this issue (this is inflation of pretest score by error as Cook and Campbell (1979) mentioned). However, after the training program they may have figured out their exact qualification level and they may have decreased the level of their perceived problem-solving capability at the posttest and direction of change in their perception became negative. This is likely to have generated the negative relationship between officers' self-directedness level and change in their perception. However, this result might have been due to the statistical regression, and may have caused a spurious relationship between self-directedness of officers and change in their perceived problem solving capability.

Controlling pretest scores of each gain related variable, the OLS regression analyses support this claim and shows that self-directedness of the officers significantly and positively related to not only change in officers perceived problems-solving capability but also three of the other gain-related outcomes. Finally, it can be said that there is a positive relationship between self-directedness of the officers and change in their attitudes toward community oriented policing at the end of the online COP training program holding constant pretest scores and other independent and control variables.

Although the main interest of this study is examination of the relationship between self-directedness level of police officers and outcomes of online COP training program in which they participated, the results also give ideas about what other factors influence these outcomes. Findings of this study showed that after the self-directedness level of the officers, the most important variable predicting outcomes of online COP

training program is officers' assigned unit (COP related or not) during the training program. According to the results, officers working in COP related units were more likely to have higher level of perceived learning and satisfaction at the end of the online COP training program than officers working in other units. In addition, in terms of three of the six gain related variables (change in orientation to COP, change in support for COP, and change in perceived problem-solving capability), officers working in COP related units had more positive change at the end of the training program. Even, controlling pretest scores also strengthens the importance of this variable on predicting gain-related outcomes of the online COP training.[101] Actually, these results are not surprising. As Mastrofski and Ritti (1996) theorized, organizational level considerations influenced the impact of police training; that is, "training has a significant positive effect in agencies that provide a supportive environment, but fails to have an effect in agencies that are otherwise in different or hostile to the purposes the officers are trained for" (Feltes, 2002, p. 55). Mastrofski and Ritti's (1996) research focusing on the effects of training in DUI (Driving Under Influence) arrest productivity in different police departments also demonstrated that "in departments that value DUI arrest productivity, training has a strikingly positive effect" (pp. 317-318). Similarly, for the online COP police training, it was already expected that officers who were working in COP units were more likely to be exposed to a more supportive environment during the training program compared with the officers who were working other departments, and thereby, their success in the training program may have been affected positively. The results mentioned above also support this expectation.

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[101] As seen in table 15, assignment is also significantly related to change in officers' support for non-traditional policing in favor of cop related units controlling the pretest scores.

The other variable emerging as the third important predictor for outcomes of the online COP training program is gender. In four models (Model 1, 2, 3, and 4), this variable has significant relationships with the outcomes. However, the findings are contradictory; whereas gender is related to the perceived learning level and satisfaction in favor of male police officers, it is also related to two gain variables (change in support for non-traditional policing and change in support for traditional policing) in favor of female police officers. When we look at online learning related literature, the researchers focusing on the relationship between gender and achievement or success in online learning did not find any significant relationship (Dutton, Dutton, & Perry, 2002; Wojciechowski & Palmer, 2005; Wu & Hiltz, 2004). In contrast, this study shows that male police officers are more likely to learn in online COP training program and be satisfied with it. These results find support in discussions of previous studies indicating that females are less confident with the use of the computers (Wu & Hiltz, 2004), are disadvantaged in the online learning environment (Gunn, McSporran, Macleod, & French, 2003, p. 14), and childcare responsibilities lower their performance (Dutton et al., 2002). On the other hand, in terms of change in support for non-traditional policing and traditional policing, findings indicate that female police officers have more positive change in their support for both outcomes. In Turkish Police context, female police officers generally work in offices and they do not have much more contact with the other police officers in terms of policing; therefore, they are less exposed to police culture than their male counterparts. Because of this, we can expect that female officers resist any change in policing from traditional policing to non-traditional policing less than male police officers do. This can explain why female officers have more change in their

support for non-traditional policing at the end of the online training program. However, according to the results, they also have more change in their support for traditional policing. This contradictory result cannot be explained easily; it may be due to response bias of female police officers or the large unbalanced distribution between male and female officers or any other reasons.[102]

The other important variable predicting outcomes of the online COP training is internet accessibility of the police officers during the training program. Results show that this variable is significantly and positively related with one of the three main outcomes (perceived learning level) and two of the six gain related outcome variables (change in direct support for COP and change in perceived problem-solving capability).[103] That is, according to the findings, as officers' internet accessibility increases during the online COP training program, their perceived learning level, change in their direct support for COP and change in their perceived problem-solving capability also increase at the end of the training program. These results provide support for previous discussions indicating that one of the most important barriers to achievement and learning in online learning environment is limited or lack of internet or computer accessibility (Ibrahim & Silong, 2000) and online learning can be hindered due to limits to access the internet (Murphy et al., 2007). Similar to the results of this study, Pachnowski and Jurczk (2000) also found that having reliable internet accessibility was one of the features of successful online

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[102] The relationship between gender and change in support for non-traditional policing and traditional policing was also examined through independent sample t-test in terms of pretest, posttest, and change. The results showed that there is significant difference between male and female only for change variables in favor of female officers.

[103] According to table 15, accessibility is also significantly and positively related with change in officers' orientation to COP when controlling pretest scores. However, significant relationship between this variable and change in perceived problem solving capability disappear.

learning students. However, although some previous studies indicated that there was a positive relationship between internet accessibility of the student and their satisfaction in an online learning program (Creedy et al., 2007), this study does not show any significant relationship between internet accessibility and officers' satisfaction with the online COP training program.

The other variables in the models seem not to be significantly related to two of the main outcomes, perceived learning and satisfaction. However, according to the results, three of them (computer knowledge, pre-experience in online learning, and age) are significantly related to some of the gain related outcome variables. Computer knowledge has a positive relationship with only one gain related outcome, change in officers' direct support for COP.[104] As it is expected, as computer knowledge of an officer increases, change in his/her support for COP also increases. However, although prior literature on online learning emphasized the importance of computer and internet knowledge and skills in terms of outcomes (e.g., achievement or success) of online learning environment (McVay, 2000; Wojciechowski & Palmer, 2005), and although results of some studies found positive relationships between computer knowledge/skills and the outcomes of online learning (Creedy et al., 2007; Pachnowski & Jurczyk, 2000), this one significant relationship found in this study cannot provide a strong evidence for the relationship between these two concepts and support the previous literature and their claims about this issue.

In terms of previous experience in online learning (1=Yes, having experience), the results show only one significant relationship with one of the gain related variables,

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[104] However, table 15 shows that computer knowledge has also significant positive association with change in officers' perceived problem-solving capability controlling the pretest scores.

change in perceived problem-solving capability. Although previous studies claim a positive effect of having experience on the outcomes of online learning (Wu & Hiltz, 2004) and found a significant relationship in favor of having experience (Wojciechowski & Palmer, 2005), this study shows that there is a significant relationship between this variable and change in officers' perceived problem-solving capability at the end of the training program in favor of officers who did not have any experience in online learning controlling the other variables. That is, these officers had more change compared to the officers who had experience. This result is not consistent with expectations and literature about this issue, and it might be due to the unbalanced distribution of this variable.[105]

According to the results, age also seems significantly and positively related with two of the gain related outcomes (change in support for COP and change in perception on police-public relations). That is, as officers' age increase, change in their support to COP and change in their perception on police-public relations also increase. Although some studies indicated that being young was an advantage in online learning (Ibrahim & Silong, 2000) and might be effective on success of students (Pachnowski & Jurczyk, 2000), some research found positive relationships between age and outcomes of online and self-directed distance learning (Harriman, 1990; Wojciechowski & Palmer, 2005). This study is also consistent with this later research. The positive relationship can be explained by Sitzmann and her colleagues' discussion: older trainees "have more positive attitudes toward training, are less anxious, and focus more on achieving specific learning outcomes than younger trainees" (Sitzmann et al., 2006, p. 630).

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[105] As shown in the descriptive statistics, only 9 percent of the respondents had experience before the online COP training program

Finally, the main analyses of this study could not identify any significant influence of education level, previous experience in COP training, rank, and department size (logged) in which officers worked on outcomes of the online COP training program. However, as seen in table 15, controlling pretest scores make rank (1=line officers) and logged department size significantly related to some of the gain related outcomes. That is, results show that whereas line officers have more change in their orientation to COP and their direct support for COP, officers working in large city police departments have more change in their direct support for COP and their perceived problem-solving capability because as their logged department size increases, change in those attitudes also increases.[106]

As mentioned frequently, the aim of the online COP basic training program is to move values and attitudes of the police officers away from traditional policing to the non-traditional policing model of COP. Therefore, it can be expected that if this training program was successful, there should have been positive changes in the attitudes and beliefs of the officers in favor of COP. However, because of the validity threats of the research design of the study, we should be cautious to say any change or gain is due to the online COP training program. On the other hand, in spite of this limitation of the design, we can still discuss the gain of the officers at the end of the training program.

In terms of six gain related variables described previously, results showed expected change for each of them. However, whereas four of these changes were significant, the other two (change in officers' support for traditional policing and change in officers' orientation to COP) were not. In general, the findings of this study reveal that

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[106] These results related to department size are opposite of the expectation mentioned in the methodology part.

there were significant and expected changes in officers' attitudes and behaviors toward community policing at the end of the online COP training program. Even being cautious, it may be claimed that the online COP training program had a positive influence on shaping police officers' attitudes and behaviors related to community oriented policing. It should be also emphasized that despite of the fact that officers had significant gain (changes) in terms of attitudes toward COP, these changes were very small. The results of this study are very consistent with Haarr's (2001) research focusing on impact of the Phoenix Regional Police Training Academy on police recruits' attitudes toward COP and finding significant impact of the academy training on police recruits' attitudes and skills. Similarly, her results also showed that changes at the end of the training program were very small. There might be a question asking why there were small changes or no change in attitudes at the end of the online COP training program. In reality, since the TNP have long been applying traditional policing approaches in all area of policing, these kinds of approaches are very influential on the behavior and the attitudes of police officers. Therefore, we could expect that pre-training attitudes of police officers should have been in favor of traditional policing. However, univariate statistics show that the officers' attitudes toward COP were positively high before the training program. This is the most important answer of the question asked above; because officers' attitudes toward COP were already high (maybe, due to inflation by error or other reasons) in the pretest, before the training program, it seems that there was small or no change in the posttest, after the training program.

In addition to the change in the attitudes of the officers toward COP at the end of the training program, the perceived learning levels of the officers and their satisfaction

level with the program can also give some ideas about success or effectiveness of the online COP basic training program. The descriptive statistics of this study show that the average perceived learning level of the officers in the training program was very high (mean=19.24) and frequency of this variable also show that approximately 70 percent of the officers agree or strongly agree that they learned in this training program; that is, their perceived learning level was high (above the moderate level). Similarly, according to the results, the average satisfaction level of the officers with the online COP training program was also high (mean=15.31). Findings reveal that 70 percent of the officers have either moderate or high level of satisfaction with the training program. Finally, it can be said that these results support success or effectiveness of the online COP basic training program on two outcomes, officers perceived learning level and their satisfaction.

6.2. CONCLUSION AND IMPLICATIONS

6.2.1. Summary and Conclusion of the study

The main problem necessitating this study was that although it is widely accepted that online learning is a self-directed learning environment (Killion, 2000; King, 1998; Murphy et al., 2007; Sitzmann et al., 2006; Thornbory, 2003; Trombley & Lee, 2002), there was a lack of research focusing on the relationship between self-directed learning and online learning.[107] Another main problem was that although the Turkish National Police (TNP) had been conducting a 60-hour online COP basic training program since 2006, and although importance of training was well-known in terms of successful implementation of community policing principles (Adams et al., 2002; Feltes, 2002;

[107] Especially in police training field (or occupational training field), any significant study focusing on these issues together cannot be located.

Gutierrez & Thurman, 2003; J. Zhao et al., 1999; J. Zhao et al., 1995), no study had empirically assessed the success of this training program.[108] Therefore, this study aimed to understand the relationship between self-directedness of officers in the TNP and the outcomes of the online training (e.g., learning, satisfaction, and gain) and to identify what other factors predict these outcomes. Additionally, this study aimed to figure out if there was any change in officers' attitudes toward community policing after the online COP basic training program.[109]

This study was theoretically based on Brockett & Hiemstra's (1991) Personal Responsibility Orientation (PRO) model. According to this model SDL is comprised of two dimensions: 1- instructional method process (which is called self-directed learning), and 2- personality characteristics of individual (called learner self-direction). The PRO model combines these two dimensions and proposes that "...optimal conditions for learning result when there is a balance, or congruence, between the learner's level of self-direction and the extent to which opportunity for self-directed learning is possible in a given situation" (Brockett & Hiemstra, 1991, p. 30). This model also indicates a link between effective learning or success and self-directedness in self-directed learning context; thus, this study hypothesized a positive relationship between self-directedness level of the officers and each of the outcomes of the online COP basic training program. Furthermore, to both identify and control other factors predicting these outcomes, a logic-

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[108] Even, there is no scientific study or research focusing on online training in TNP although TNP invests a lot of resources to the projects (e.g. Smart Class) related to this issue.

[109] Some claim that if community policing trainings are successful, they "should eventually produce change in officers' perceptions of their relationship with the community, their definition of police and community roles, and their attitudes about community policing" (Rosenbaum & Wilkinson, 2004, p. 94)

model was developed based on previous literature related to online learning and distance learning.

The data of this study were collected using a pre-experimental design, the one-group pretest-posttest design (Campbell & Stanley, 1966; Kraska & Neuman, 2008; Singleton & Straits, 2005). All the participants of the 4th term Online COP Basic Training program, conducted between May 25 and June 5, 2009, were selected as the sample of this study. There were 1406 participants of the training program working in 79 city police departments of Turkey. The data were collected through a web-survey method administered before and after the training program under the approval of the MSU Institutional Review Board. For the pretest of this research, the response rate was 1162 (83%). For the posttest, the response rate was 1006 (72%). But, when we matched the data of the pretest and posttest, the response rate including the officers who responded to both pretest and posttest was 884 (63%).

To measure the self-directedness level of the police officers, the 24-item Oddi Continuing Learning Inventory (OCLI) was used during the pretest. The other independent variables of the study and two of the main outcomes (perceived learning level and satisfaction) were measured during the posttest.[110] Gain related outcomes (change in attitudes of officers toward COP) were measured by calculating differences between posttest scores and pretest scores of six attitude-related variables.[111]

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[110] The other independent and control variables of this study were computer knowledge, internet accessibility, previous experience in online learning, age, gender, education level, previous experience in COP training, rank, assigned unit during the training program, and department size in which officers worked.

[111] These variables are support for non-traditional policing, support for traditional policing, orientation to COP, support for COP, perception about police-public relations, and perceived problem solving capability.

The multivariate OLS regression analysis was used to test the hypotheses of this study. Each outcome variable was regressed on self-directedness level of the officers and other independent/control variables. Results supported two main hypotheses (H1 and H2),[112] and showed a significant positive relationship between self-directedness and officers' perceived learning level and satisfaction with the online COP training program. These analyses also indicated that self-directedness is the most important variable of the logic model in terms of predicting perceived learning level and satisfaction. On the contrary, the main results of this study failed to show a significant positive relationship between self-directedness and the outcome variables related to change in attitudes; thus, they did not support the remaining gain-related hypotheses (H3a, H3b, H3c, H3d, H3e, and H3f). However, close examination of these unexpected results revealed that a statistical regression problem occurring due to inflated pretest scores of officers who have high level of self-directedness may have been the reason for these results. To understand whether high pretest scores were generating these results, each of the eight models was run in OLS regression by controlling the pretest scores as well. The results revealed that pretest scores were influencing the change scores and supported four gain-related hypotheses (H3a, H3c, H3d, and H3f); that is, they showed a significant positive relationship between self-directedness of the officers and change in their support for non-traditional policing, their orientation to COP, their direct support for COP, and their

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The differences between posttest and pretest scores of these variables gave the gain or change score at the end of the training program.

[112] H1: There is a positive relationship between self-directedness level of police officers and their learning level in the online training program

H2:There is a positive relationship between self-directedness level of police officers and their satisfaction with the online training program

perceived problem-solving capability at the end of the online COP basic training program controlling the pretest scores and other independent variables.

In addition to self-directedness of the officers, the results of the study also gave some ideas about other factors predicting the outcomes of the online training program. The most important finding was that assigned unit of the officers during the training program was a very important variable predicting outcomes of the online COP training. That is, officers working in COP related units are more likely to have higher level of perceived learning, satisfaction, change in their support for non-traditional policing, their orientation to COP, their direct support to COP, and their perceived problem-solving capability. The results also showed that whereas gender is related to the perceived learning level and satisfaction in favor of male police officers, it is also related to two gain variables—change in support for non-traditional policing and change in support for traditional policing—in favor of female police officers. In terms of internet accessibility, findings revealed that this variable is significantly and positively related with perceived learning level of officers and two of the six gain-related outcome variables (change in direct support for COP and change in perceived problem-solving capability). Finally, according to the results, the other independent and control variables seemed not to be significantly related to two of the main outcomes; perceived learning and satisfaction. However, three of them (computer knowledge, pre-experience in online learning, and age) were significantly related to a few of the gain related outcome variables.[113] The later

[113] Computer knowledge had a positive relationship with only one gain related outcome, change in officers' direct support for COP; previous experience in online learning was related to change in problem-solving capability in favor of those who did not have any experience; and age also seemed significantly and positively related with two of the gain related outcomes (change in support for COP and change in perception on police-public relations).

analyses conducted through controlling the pretest scores showed that rank and department size also positively related a few gain related outcomes.[114]

This study also provides knowledge about effectiveness of the online COP training program. Results revealed significant and expected changes in officers' attitudes and behaviors toward community policing at the end of the online COP training program in terms of four of the six gain-related outcomes.[115] Although we should talk about the effect of the training program (intervention) cautiously due to validity threats of the research design of this study, we can say that overall attitudes of officers toward COP were changed significantly after the training program. In addition, findings showed that officers had high level of perceived learning level and satisfaction with this online learning. All of these positive results point out the success of the online COP basic training program.

6.2.2. Implications of the results

It is clear that this study contributes to our knowledge about the relationship between self-direction and online learning as a self-directed learning environment and fills the gaps in online learning, self-directed learning and police training fields. Today, online learning is widely accepted as an important instruction and learning method and it has become the center of attraction not only for formal education and training institutes (e.g., Colleges, Universities, etc.) but also for public and private sectors seeking effective, fast, and economic training for their personnel all around the world. The Turkish National

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[114] Results show that whereas line officers have more change in their orientation to COP and their direct support for COP, officers working in large city police departments have more change in their direct support for COP and their perceived problem-solving capability because as their logged department size increases, change in those attitudes also increases.

[115] Support for not-traditional policing, support for COP, perception on police-public relations, and perceived problem-solving capability.

Police is one of those public sectors. The TNP has been offering online training programs on some special topics since 2006. In this study, the central issue of concern was one of those online training programs, the Community Oriented Policing Basic Training Course. As mentioned previously, to be able to implement COP successfully, it is important to change attitudes, beliefs and behaviors of police officers positively toward COP, and prerequisite of these changes is effective training. Thus, since COP trainings are offered only online in the TNP, it is vital to increase the effectiveness of the online trainings to achieve effective COP implementation. To increase effectiveness of online police training programs (specifically COP trainings), it is necessary to know what influences the outcomes of this kind of training. Once factors affecting these outcomes or success of online training programs are empirically found, researchers focusing on police training issues and police trainers can find the most appropriate strategies to deal with these issues. Therefore, this study provides a wealth of practical information to police trainers and organizers of police training programs, and especially online police training programs.

The findings of this study indicate a positive relationship between self-directedness of the officers and the outcomes of online COP training program (learning, satisfaction, and change in attitudes toward COP), and this variable is one of the most important predictors of those outcomes. There may be some practical implications of these results. In the short run, the first one or two lessons or days[116] of the online training programs can be designed to provide officers for online learning as a self-directed

[116] If it is a long term—such as a one semester or year-program—training program, one weak can also be planned and implemented as a opening exercises and practices session to increase officers readiness self-directed learning (online learning).

learning environment or to increase officers' readiness to self-directed learning through opening exercises and orientation practices. Opening exercises or orientation practices are very good opportunity for the participants in order to get a taste of what is to follow (Silberman & Auerbach, 2006) and learn how to behave in a self-directed online learning environment. In order to promote self-directedness of the officers in learning, these orientation activities and exercises should (Brockett & Hiemstra, 1991; Mezirow, 1981; Silberman & Auerbach, 2006):

- Help officers to become acquainted with the facilitator, other participants (for small training groups), and training materials (textbooks, software programs, etc.)
- Aim to decrease the officers' dependency on facilitator or trainer(s)
- Attract officers' interest in the training topic
- Assist officers to define and assess their capabilities and needs so that each of them can outline his/her individual learning plan
- Provide feedback for each learning plan
- Locate available resources related to the training topic and build a resource collection including all necessary information, media, etc.
- Encourage officers to contact resource people related to the learning topic and to set up learning experiences.
- Help officers to approach to learning independently and foster learner decision-making.
- Promote online discussions and small group activities to attract officers' interest in learning experience

- Develop a positive attitude toward self-directed inquiry and learning itself, and reinforce the self-concept of the officers as learners.
- Facilitate problem posing and solving ability of the officers[117]

The other short run implication might be matching teaching strategy with self-directedness level of the officers as the PRO model indicates. Here, one of the instructional models, Staged Self-Directed Learning (SSDL) model of Grow (Grow, 1991) can be used to increase the effectiveness of the online training program. SSDL depends on some important assumptions, such as "the goal of the educational process is to produce self-directed, lifelong learners", "there is more than one way to teach well", "one may be self-directed in one subject, a dependent learner in another", "self-direction is advantageous in many settings" and "self-direction can be learned—and it can be thought" (Grow, 1991, p. 127). In this model there are four stages of learners: a) dependent learner, b) interested learner, c) involved learner, d) self-directed learner. For each stage, learners become more self-directed than the previous stage. Grow also indicates that teaching strategies should be individualized and matched the self-direction stage of the learner. He also shows four different teaching strategies matching learner's self-direction stage: a) authority, expert, b) salesperson, motivator, c) facilitator, d) delegator (Grow, 1991, p. 143). This approach of SSDL is also parallel with balanced teaching-learning transaction assumption of the PRO model (Brockett & Hiemstra, 1991). Grow adds that "the fundamental movement implicit in the SSDL model is the movement from dependent to self-directed learning. Teaching is matched to learners with the

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[117] As seen, aim of these recommendations is to facilitate and promote self-directedness in learning environment; therefore, some of them should also be incorporated in all body of the online training programs.

explicit purpose of helping them attain the knowledge, skills, motivation, and goal of becoming more autonomous in learning and ... in life" (Grow, 1991, p. 142).

Regarding the results of this study emphasizing the importance of self-directedness in online training and depending on SSDL, it can be suggested that self-directedness level of officers who will participate in any online training program (COP or other) can be identified before the training program in needs assessment process using OCLI or similar instruments.[118] Then, participants should be put into different groups or stages described in SSDL according to their self directedness—from the group of dependent learners to the group of self-directed learners. Online learning programs should also be designed regarding self-directedness level of each groups; that is, whereas for the dependent learner groups, an authority teaching strategy can be planned and applied, for the self-directed learner groups, facilitator or delegator teaching strategies can be planned and applied.[119] It is important that for each group, "teachers' purpose *should be* to match the learner's stage of self-direction and prepare the learner to advance

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[118] Needs assessment is very important part of any comprehensive training or Professional Development (PD) program plan and process. This plan process is generally comprised of five main steps: analyzing program contexts, assessing needs, developing instructional objectives, selecting instructional formats and methods, and assessing training (Danziger & Dunkle, 2005; Queeney, 1995; Silberman & Auerbach, 2006; Vella, 2002). Two of well-known examples of training or PD design process are ADDIE (Analyze, Design, Development, Implement, and Evaluate) Instructional Systems Design Process (Noe, 2005) and Interactive Model of Program Planning (Caffarella, 2002). All of these plan and implementation models emphasize importance of need assessment defined as "a decision-making tool for continuing educators' use identifying the educational activities or programs they should offer to best meet their clients'—and society's—educational needs" (Queeney, 1995, p. 1)

[119] Example teaching style for dependent learners group might be informational lecture with increased interaction through well-designed synchronize online programs, coaching including immediate feedback, overcoming deficiencies of the of the officers because these learners need teacher-centered learning; for interested learners group, it might be inspiring lecture supported by online discussions guided by teacher and learners should be encouraged and motivated to learn on their own; for involved learners group, it might be discussion and group projects which are facilitated by teacher; and finally, for self-directed learners group, teacher should be consultant, there might be self-directed study group or individual work projects, and student-directed discussions conducted online (Grow, 1991).

to higher stages" (italics were added, Grow, 1991, p. 129) so that the officers can be more successful in the online training program.

On the other hand, as understood in this study, online learning may not be good teaching-learning method for highly dependent learners or for those with low level self-directedness. Therefore, officers can be divided into two groups during the needs assessment and planning process: officers with low level self-directedness and officers with moderate or high level self-directedness. For those officers with low level self-directedness, face-to-face training program can be organized and in these programs, trainers should aim to increase those officers' self-directedness level so that they can be ready for other online learning programs. For those officers who have moderate or high level self-directedness, well-designed online learning programs can be applied. Finally, it can again be emphasized that during all the process of planning and implementation of online police training programs, the trainers, organizers, and planners should keep in mind that there is a positive relationship between self-directedness of the officers and the outcomes of online training.

Furthermore, it can be foreseen that online and similar technological and self-directed learning methods will dominate future training and education field. Therefore, it is important to make all officers of the TNP ready to learn and behave in self-directed manner.[120] In long run, one of the best ways to provide this is that strategies enhancing self-directedness of the officers should be incorporated in the curricula of both the police academy and police schools. Brockett and Hiemstra (1991) suggest three strategies to

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[120] A number of the studies on self-directed learning indicates that self-direction can be learned and progressed (Brockett & Hiemstra, 1991; Grow, 1991; Knowles, 1975; Merriam, Caffarella, & Baumgartner, 2007; Mezirow, 1981, 1991)

enhance learners' self-direction: facilitating critical reflection, promoting rational thinking, and using helping skills in the facilitation process. According to Brookfield (1987, p. 4), "in adulthood, we are thinking critically whenever we question why we, or our partners, behave in certain ways within relationships." Similarly, Brockett and Hiemstra (1991, p. 134) indicate "when people question existing ideas or behaviors, or information that has been presented to them, they are engaging in critical thinking." According to these scholars, since critical thinking requires analysis and judgment of any given situation or problem, it is an important part of self-directedness in learning. To facilitate learning of critical thinking, there are some suggested activities that students of the police academy and schools can be encouraged to apply: reading, participating in the arts, thinking, writing, discussing, and acting (ibid.). On the other side, rational thinking refers to choosing to retain control of our lives through controlling our responses to the events occurring around us (Brockett & Hiemstra, 1991). This thinking process supports the association between personal responsibility of adults and their self-directedness. Therefore, in the pre-service training process, how to think rationally should be taught. The last strategy, using helping skills to enhance learner self-direction, refers to the fact that facilitators use some core skills to enhance learners' self-directedness. These skills are respecting and being genuine to the learners,[121] and some basic communication skills, such as listening, attending, empathizing, and probing (Brockett & Hiemstra, 1991). These skills should be applied by trainers and commanders of the police academy and police schools so that recruits' self-directedness can be progressed. Importantly, to apply

[121] "Respect does not necessarily mean that the facilitator must agree with the learner; it does mean that the facilitator accepts the learner despite these kinds of differences" (Brockett & Hiemstra, 1991, p. 141)

these strategies in pre-service police training institutes, trainers should also be trained in using theories and practices related to self-directed learning.

The other most important finding of this study is that there is a relationship between officers' assigned unit during the online training program and the outcomes of the training in favor of those working in COP related units; that is, officers working in COP related units are more likely to have higher level of perceived learning, satisfaction, and positive change in their attitudes toward COP at the end of the training program. Based on these results and discussions on this issue, it can be suggested that only officers working in COP related units during the training program should be accepted for this kind of online COP basic trainings. The reason is that officers working other units may not be exposed to a supportive environment during the training program. On the contrary, officers, working in COP related units and supported by their departments, may find more opportunity to practice what they learned in real duty, and they may be more motivated because the training is mostly related to their duties. However, this doesn't mean that COP training should not be offered to the other officers working in different units. It is clear that in this new policing era, the aim of TNP should be moving attitudes of not only officers working in COP units but also officers working in other units from traditional policing to non-traditional COP policing. This will facilitate implementation of COP and may increase its success. Therefore, for other officers, workshops or similar training programs related to COP can be applied.

This study also shows that male police officers are more likely to learn in an online COP training program and be satisfied with it. In terms of implementation of this result, departments should facilitate female officers' participation process by providing

more flexibility and time regarding their family responsibilities during the training program. In addition, some courses or programs can be organized for female officers to increase their computer and internet knowledge and make them more confident with the technology environment.[122] In the literature, gender differences in learning environment is widely examined, and it is indicated that in terms of success, there might be link between gender differences and the way students learn (e.g., teaching method, learning strategy, or learning style) (Blum, 1999; Severiens & Dam, 1994). One of those ways is collaborative learning[123] or learning in group. Some of the prior research also found that female learners preferred collaborative learning (Lundeberg & Moch, 1995) or they may be more receptive to learn in group context (Underwood & Underwood, 1999). Therefore, it was suggested to design learning environments promoting and encouraging collaborative learning for females (Blum, 1999). Based on prior studies, it can be said that female police officers may not find the online method offered through only classic lecture method as supportive. Thus, online courses can be complemented with group activities for female officers.

Moreover, according to these results, internet accessibility is also seen positively related to some of the outcomes of the online learning (perceived learning level, change in direct support for COP and in perceived problem-solving capability). It is known that departments are responsible for providing internet connected computer for their officer

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122 Actually this programs can be also organized for male officers who have no or limited internet or computer knowledge.

123 Collaborative learning refers to a learning environment in which groups of learners work together to achieve a common goal (Underwood & Underwood, 1999). Collaborative learning covers a broad area of approaches based on discussions and active work with the course material (Smith & MacGregor, 1992). There are some collaborative learning methods used by instructors widely. Some of these are guided discussion or teaching, case study, role-playing, demonstration and simulation, problem-centered instruction, writing groups, peer teaching (Cantor, 1992; Silberman & Auerbach, 2006; Smith & MacGregor, 1992).

during the synchronized lessons. But, for online learning, this is not enough. That is, for future online training programs departments should provide more opportunities to reach internet for the officers who do not have efficient internet access in both work and home.

Finally, we can also talk about theoretical implication of the results. The literature related to online learning shows a gap in terms of theory to understand this field comprehensively (Imel, 2003). This study, based on self-directed learning theory (Personal Responsibility Orientation Model) and adult learning theories showed a significant and positive relationship between self-directedness and outcomes of online learning. Therefore, any future theoretical endeavor to understand and describe online learning should incorporate self-directedness of learner into their definitions, propositions and models. In addition, theoretical approaches related to self-directed learning emphasize the importance of context referring to a variety of settings in which learning occur and including both institutional and the global contexts which participants experience during the learning process (Brockett & Hiemstra, 1991). In occupational learning settings in which non-traditional adult learners are trained, work conditions to which trainees are exposed are important learning contexts (e.g., work load, shifts, supervisory or departmental support, etc.) (Bartlett, 1999). This study revealed that some of the context-related variables (e.g., assigned unit and internet accessibility) are significantly linked to the outcomes of online learning. Therefore, future theoretical endeavors focusing on online learning should also cover context issues.

6.3. LIMITATIONS AND FUTURE RESEARCH

6.3.1. Limitations of the Study

As with any scientific study, this study is not without limitations; several limitations are inherent. As mentioned previously, one of the most important limitations is its research design, the one-group pretest-posttest design. There are a number of possible threats to validity in this design (Campbell & Stanley, 1966; Cook & Campbell, 1979). These threats make it difficult to say any change in officers' attitudes toward COP is due to the online training program. Therefore, throughout the study, caution was used when talking about the effect of the online training program on gain of the officers. Non-random sampling and lack of control group are also other design related limitations of this study. Although participants were not randomly assigned to that training program, some of their demographic characteristics showed similarities to the general population of the TNP. However, this comparison was done based on only two broad variables (gender and rank); there might be other important differences that could not be captured. This is an important limitation and weakens the generalizability of the results. On the other hand, due to the lack of control group, we could not control some of the threats to validity mentioned above. In addition, although we got some idea about the effectiveness of the online training program, we could not learn the extent of this effectiveness compared to the traditional face-to-face community policing training because of the absence of control group.

Additionally, there are several measurement-related limitations. First, because the training program did not provide an opportunity to measure direct learning level or success of the officers, to measure these outcomes, intangible measurements were used,

such as perceived learning level, and satisfaction. Although these intangible measurements are widely used to measure outcomes of education or training programs in the literature, use of them can be seen as a limitation because sometimes students' evaluation might be different from the tangible grades they would receive (Y. Zhao et al., 2005). Furthermore, use of translated instruments can be seen as a limitation of this study. Although previously developed and validated scales and instruments provide advantages in terms of time, energy and comparison of the findings with previous studies, use of those instruments in a linguistically different population may cause distortion of the original intent of the instruments due to any translation problem or it may not be consistent with the other population or culture (Yu, Lee, & Woo, 2004). To minimize any negative effect of this limitation, accuracy of the translation and congruity of the questions to the Turkish and TNP context were checked through a cognitive interview with seven members of TNP.[124]

The lack of qualitative research is also another limitation of this study. Although they have a number of strengths, quantitative studies may not provide in depth understanding of human experiences and behaviors. Similarly, because the general tendency in quantitative studies is testing the predetermined hypotheses through standardized questionnaire or interviews, respondents answer only what the researchers ask them. Therefore, some interesting responses occurring spontaneously may be excluded or missed (Grossnickle & Raskin, 2001). However, the particular strength of qualitative research is that we can look or understand more closely how things/events

[124] Four of them were graduate students in the U.S., two of them were officers who graduated from graduate programs in the U.S. and were working in TNP, and one of them was a graduate from a graduate program in the U.S. and was working in a COP unit in Turkey.

work or occur through providing detailed description of the events, group, particular setting, culture, etc. (Seale, 2004). Therefore, some qualitative research approaches—such as *phenomenological* research focusing on meaning of a concept or phenomenon experienced by several individuals, or *grounded theory* research aiming to generate or discover a theory summarizing the analytical schema of a process (Creswell, 2007)—may have helped to understand the experiences of the police officers in online COP police training program, or helped to generate a theoretical approach to understand the online training process comprehensively.

Moreover, this study made the assumption that online learning was a self-directed learning environment. However, it is clear that there may have been variance in the delivery of each online lesson in terms of level of self-directed learning environment. Therefore, lack of measures of the extent of self-directed learning in each lesson is another limitation of this study. That is, like the learners' self-directedness, to what extent each instructor or each lesson provided self-directed learning environment could have been measured.

On the other hand, the policy implications focusing on self-directedness of officers were made based on SDL related results of this study. However, it is clear that the main analyses showed that models of this study explain at most 10 percent variance in outcome variables (e.g., perceived learning level and satisfaction). Therefore, there must be some other variables explaining those outcomes significantly and we could not capture in this study.

Finally, although this study provides some ideas about the extent officers' attitudes toward community oriented policing changed at the end of the training program,

it cannot give any information about whether officers could apply or transfer what they learned from the training program to the actual work environment. Similarly, this study did not assess the implementation process of community policing nor the factors that affect implementation (e.g. supervisory support, work load, citizen support, etc.). In addition, this study does not provide knowledge about whether the officers maintained their attitudes toward COP or whether there were changes in those attitudes (negative or positive) during the implementation process. That is, the lack of follow-up research on the impact of this training in the daily police workplace is another limitation of this study.

6.3.2. Future Research

The limitations and results of this study provide some recommendations for future research. First, this study needs to be reorganized through a research design including both random assignment and control group, such as the pretest-posttest control group design.[125] Such a design would address many of the threats from which this study suffers. In addition, this kind of design will provide the opportunity to understand to what extent the online COP training (or other police trainings) is effective on the outcomes of the training by comparing the treatment and control groups (i.e., those exposed to traditional face-to-face COP training). This would also give the opportunity to observe the influence of self-directedness on outcomes in each training environment. Similarly, a

[125] In a research conducted through pretest-posttest control group design the experimental group is observed or measured before and after the treatment. The control group is also observed or measured at the same time but does not receive the treatment or receive another treatment (Singleton & Straits, 2005). For example, in our case, whereas the experimental group is exposed to online COP training, the control group can receive traditional face-to-face COP training.

longitudinal panel study[126] that would provide a follow-up (time 3) can be designed after three or six months from the training program to identify any changes in officers' attitudes toward COP after the training program, to what extent they can apply what they learned from the training, and what predicts both changes in attitudes and implementation process.

Future research can use more tangible measurements (e.g. grades, test scores, etc.) to measure outcomes of the online training program in addition to the intangible measurements (e.g., perceived learning level and satisfaction). The relationship or correlation between these tangible and intangible measurements should be examined. Additionally, the translated instruments used in this study should be applied by future research to understand their reliability and to compare results with this study. Moreover, other scales can be also used to measure self-directedness of the officers (such as SDLRS) and its results can be compared the results of this study taken by OCLI.

The PRO model suggests that there should be balance and harmony between learners' self-direction and self-directed learning environment (Brockett & Hiemstra, 1991). In this study it was assumed that online learning was a self-directed learning environment and thereby, self-direction of the officers was the main interest. However, if lessons are presented by different instructors there may be variance in providing self-directed learning environment. Therefore, future research should also take into account the extent to which the process, learning environment, or instructors provides self-directed learning opportunity.

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[126] In panel study, researchers observe the same set of people at two or more times (Maxfield & Babbie, 1998). This design allow the researchers to identify the changes in people, groups, or any selection that they are studying (Bachman & Schutt, 2001). The key issue in panel studies is that follow-up sample from which data collected in time 2 or time 3 is the same as the sample from which data collected in time 1 (except those people who are not to be able to located).

Finally, regarding their strengths and limitations, it can be suggested that future research should apply combinations of both qualitative and quantitative approaches. Whereas quantitative research will provide the opportunity to test existing theory and examine any causal relationship between self-directedness of officers and outcomes of online training, qualitative approaches may provide in depth understanding of officers' experiences in online police training program and help to generate theoretical approaches summarizing the online police training process. Emphasizing the importance of the qualitative research, Brocket & Hiemstra (1991, p. 83) indicated that "in the current effort to gain greater understanding of self-direction in adult learning, qualitative approaches have been the most recent stream of inquiry to evolve and...offer much toward creating a greater understanding of the context in which self-directed learning takes place, and the many meanings that learners and educators attach to the concept of learner self-direction."

APPENDICES

APPENDIX A – PARTICIPANTS OF THE 4TH TERM ONLINE COP BASIC TRAINING PROGRAM

City #	Name of the City	n	City #	Name of the City	n
1	ADANA	**30**	42	KONYA	**21**
2	ADIYAMAN	**10**	43	KÜTAHYA	**26**
3	AFYONKARAHİSAR	**19**	44	MALATYA	**20**
4	AĞRI	**9**	45	MANİSA	**35**
5	AMASYA	**1**	46	KAHRAMANMARAŞ	**26**
6	ANKARA	**15**	47	MARDİN	**16**
7	ANTALYA	**37**	48	*MUĞLA*	*No participant*
8	ARTVİN	**9**	49	MUŞ	**5**
9	AYDIN	**33**	50	NEVŞEHİR	**9**
10	BALIKESİR	**39**	51	NİĞDE	**11**
11	BİLECİK	**8**	52	ORDU	**23**
12	BİNGÖL	**7**	53	RİZE	**10**
13	BİTLİS	**4**	54	SAKARYA	**16**
14	BOLU	**15**	55	SAMSUN	**35**
15	BURDUR	**16**	56	SİİRT	**11**
16	BURSA	**48**	57	SİNOP	**11**
17	ÇANAKKALE	**18**	58	SİVAS	**18**
18	ÇANKIRI	**9**	59	TEKİRDAĞ	**17**
19	ÇORUM	**19**	60	TOKAT	**26**
20	DENİZLİ	**8**	61	TRABZON	**23**
21	DİYARBAKIR	**23**	62	TUNCELİ	**2**
22	EDİRNE	**15**	63	ŞANLIURFA	**29**
23	ELAZIĞ	**8**	64	UŞAK	**5**
24	ERZİNCAN	**8**	65	VAN	**27**
25	ERZURUM	**17**	66	YOZGAT	**10**
26	ESKİŞEHİR	**23**	67	ZONGULDAK	**14**
27	GAZİANTEP	**72**	68	AKSARAY	**8**
28	GİRESUN	**12**	69	BAYBURT	**3**
29	GÜMÜŞHANE	**2**	70	KARAMAN	**9**
30	HAKKARİ	**4**	71	KIRIKKALE	**9**
31	HATAY	**27**	72	BATMAN	**4**
32	ISPARTA	**10**	73	ŞIRNAK	**12**
33	MERSİN	**41**	74	*BARTIN*	*No participant*
34	İSTANBUL	**53**	75	ARDAHAN	**11**
35	İZMİR	**73**	76	IĞDIR	**4**
36	KARS	**7**	77	YALOVA	**5**
37	KASTAMONU	**6**	78	KARABÜK	**9**
38	KAYSERİ	**18**	79	KİLİS	**7**
39	KIRKLARELİ	**17**	80	OSMANİYE	**15**
40	KIRŞEHİR	**12**	81	DÜZCE	**12**
41	KOCAELİ	**50**		**TOPLAM**	**1406**

APPENDIX B – LESSONS PRESENTED IN THE ONLINE COP BASIC TRAINING PROGRAM AND THEIR SHORT DESCRIPTIONS

The Online COP Basic Training program was an online in-service training program and offered a synchronous training for the officers. There were 6-hour lessons every day during the course. Although participants were expected to follow the lessons simultaneously, they did not have to do so. Because all lessons were recorded as video and published, all PowerPoint and other presentations were uploaded to the website, and there was also some other resources related to lessons on the website, those who could not follow the lessons synchronously because of their work or personal issues or those who wanted to repeat the lessons could watch the lessons or read the materials asynchronously whenever and wherever they wanted. The lessons of the COP Basic Training program were provided both by ranked police officers who were experts on COP and who had academic or professional training on COP, and by academician from Universities. Each instructor gave his/her presentation, outline of his/her lesson, copy of helpful resources related to his lesson or links to resources to the organizers of the program and all of them were uploaded to the website of the lessons so that participants could use them. The lessons were presented through a stand-up presentation method. During the lessons, if a student had a question, he sent it as soon as possible to the program's email address and it was asked to the instructor during the lesson. If a student had a question out of the time of the program, he/she still could send the question through e-mail to the program organizers or direct to the e-mail address of the instructors. The table below shows names and number of hours of each lesson of the training program and presents explanation of each of them.

	Name of the Lesson	Number of Hours	Explanation
1	How Policing is Applied in Turkey Now	2	This lesson aim to provide base to COP so that the participants of the training program can understand later information better. General structure of the TNP, contemporary innovations in policing and in the TNP, dimension and types of crime in Turkey, and changes in policing approaches are taught in this lesson.
2	Definition of COP and Its Development: Implementations of COP in U.S. and EU Countries	2	This lesson focuses on what is the meaning of COP, how it emerged and has developed in the world. In this lesson, some examples related to implementation of COP in the United States and in some European Union countries are discussed. That is, this lesson aims to give a pre-vision related to COP to the trainees.

3	Philosophy of COP and Its Goals	2	In this lesson, what is the main philosophy underlying COP, what makes it differ from traditional policing approaches, what are the main goals in the implementation of COP in the community, how these goals can be achieved are discussed.
4	National and International Regulations on COP Services	2	What are the legislations supporting COP in Turkey, and what are international regulations constituting the ground of implementation of COP are taught in this lesson. Comparison of both national and international regulations is also discussed.
5	Fear of Crime and Eliminating Fear of Insecurity and Crime in the Community	2	Shortly, what the fear of crime is, relationship between crime rates and fear of crime, and how to approach and treat the fear of crime in the community are taught in this lesson. Specifically, some statistical analyses showing the relationship between fear of crime and crime rates are presented; how fear of crime emerge among people, and the relationship between police and citizen and its effect on fear of crime are discussed.
6	Identification of the Area of Responsibility and Its Importance	2	In this lesson it is mentioned that each CO-P is responsible for his/her duty area and has to be able to know and identify his/her responsible area well. To achieve this, CO-Ps should enter the community and establish relationship with the citizens. During this process, CO-Ps are responsible for identifying the problems from which community suffer and attempting to understand and define the reasons of the problems by the help of the citizens. They also responsible for developing alternative responses to solve the identified problems together with representatives of the community, other police departments, and other public/private sectors. Then, they will lead to the implementation of the solutions, establish connection between each party

			of the solutions, and follow to what extent the implementations are achieved. In this lesson, trainees are also taught how to do each of the items mentioned above.
7	Comprehensive Approach to COP Services	2	In this lesson, practitioners tell comprehensively how to implement COP in the cities, what are the key features of the implementation of COP, importance of establishing communication and relationship with the citizens in neighborhoods, how to establish relationship with the citizens, and what kind of problem might be faced during this process, and how to cope with them.
8	Role of the Municipal Governments in Struggling Crime	2	In this lesson, what are the roles of the municipal governments in struggling with crime in other countries and in our country, what the municipal governments can do related to the people who tend to commit crime and related to places providing opportunity to commit crime, what are the contributions of the municipal government to preventing crime, and how the relationship between the municipal governments and the police should be are discussed.
9	Characteristics of Community Oriented Police (CO-P).	2	Though showing differences of community oriented police from traditional police, in this lesson some the most important characteristics of CO-P are discussed.
10	Importance of infrastructure of the Information Technologies in the Implementation of COP	2	In this lesson, it is mentioned that the use of related technology is very important to implement COP effectively, and to increase its efficiency. In this lesson, a software program provided by General Directorate of Security Department of Data Process in order to record all activities related to COP across the country. Through the lesson, how to use this software program is taught. This software program provides opportunity

			for both the central organization and each of city organizations to see success and problems encountered in different cities and to learn lessons from experiences of other COP units.
11	Analysis of Crime and Importance of it in COP services	4	In Turkey, there is a project called Crime Analysis Central Project that aims to analyze crime across the country and also in each city. In this lesson, how to use the data provided by this project is thought. Specifically, how to make strategic and tactic analysis depending on this project, and how to use crime maps are taught.
12	Programs And Activities In Which Citizens Participate	3	Two police officers working in two different cities of Turkey, Eskisehir and Kayseri, tell about challenges that they face during the implementation of COP in their duty area, and they explain what they did to get citizen participate into activities and programs related to preventing and struggling with crime and related to problems of neighborhoods. They, specifically, tell how to establish relationship with other organizations, how to inform citizens, how to visit citizens, and what kind of activities and programs in which citizens participate they organized and planned to organize etc.
13	Practice of Daily Works of CO-P in the Duty Area	8	This is an eight-hour lesson. Participants are expected to go street in their duty area and try to apply or think how to apply what they learned in the course, and write-down if they have questions or ideas related to implementations of the COP. Then their experiences or questions are discussed through online.
14	Psychology of Community	3	This lesson aim to make officers to learn the psychology of the community that they serve. This important to acknowledge to whom we, as police officers, serve, and from whom we are expecting support in struggling with and preventing crime. Specifically, this

			lesson focuses on why people tend to live together, what are the reasons underlying this.
15	Relationships with the Media	2	This lesson focuses on how police-media relationships should be, historical overview of these relationships, how the police can lead the media, and how the media can be used to inform citizens about COP activities, programs, and successes.
16	Communication Techniques and Public Relations	3	For successfully implementation of COP, establishing effective communication with the citizens is very important. In this lesson, effective communication techniques are taught and main parts of communication process are discussed, such as resource, message, channel, receiver, feedback.
17	Body Language	4	Body language is one of the techniques used in effective communication. How to use our body effectively to establish successful communication with citizen through the implementation of COP process is taught in this lesson.
18	Victims' Rights and Consultations and Support Services for Victims	4	One side of crime, criminal activities or problems in a community is victim. In the problem solving process in neighborhood, victims should be also taken into account. In order to help victims effectively, police should know rights of them, how to help them, which public/private sectors provide consultation or support for victims, etc. This lesson focuses on these issues.
19	Police Professional Ethic	3	In this lesson some of the professional principles forcing police officers to behave in a certain way, preventing or limiting their personnel tendencies, defining and eliminating the unprincipled officers, arranging domestic competition, etc. are taught and discussed.
20	Police Culture	2	Several positive and negative characteristics which shape or affect routine police decision-making process and how new recruits become socialized

			in the available culture are told in this lesson. Also, the relationship of the current police culture with the new innovation, COP, and how to fit police culture with COP are discussed.
21	Human Rights	4	Human rights issue has very important place in democratic societies. In democratic societies, it is clear that there is a relationship between Human Rights and policing. Police should be also very respectful to human rights during the implementation of COP. In this lesson, historical development of human rights, international and national law and regulations related to human rights, and how to incorporate human right principles in police daily routine during the implementation of COP are discussed.

APPENDIX C – SURVEY INSTRUMENT (ENGLISH VERSION)

PRETEST

The questionnaire delivered as a pretest was comprised of questions and scales measuring attitudes toward Community Policing, ODDI Continuing Learning Inventory (OCLI), and Assessing The Learning Strategies of Adults (ATLAS) instrument.

COMMUNITY ORIENTED POLICING RELATED QUESTIONS FOR PRETEST

Direction: This part of the questionnaire aims to measure your knowledge about general policing activities and Community Oriented Policing. COP is acronym for Community Oriented Policing. Please be objective and realist as you possibly can when you answer the each question.

1- How much of the agency's/department's resources should be committed to the activities listed below? Please check the response that best describes your opinion.

	None	Small Amount	Moderate Amount	Large Amount
a) Patrolling on foot in neighborhoods	1	2	3	4
b) Marketing police service to the public	1	2	3	4
c) Explaining crime prevention techniques to citizens	1	2	3	4
d) Handling special events	1	2	3	4
e) Researching and solving problems	1	2	3	4
f) Coordinating with other agencies to improve the quality of life in the city	1	2	3	4
g) Working with citizen groups to resolve local problems	1	2	3	4
h) Assisting persons in emergencies	1	2	3	4
i) Helping settle family disputes	1	2	3	4
j) Responding to calls for service	1	2	3	4
k) Checking buildings and residences	1	2	3	4
l) Responding to crimes	1	2	3	4
m) Investigating criminal incidents	1	2	3	4
n) Traffic enforcement	1	2	3	4

2- To what extent do you agree or disagree with the following statements? Check the number that best corresponds to the level of your agreement with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Police officer should make frequent informal contacts with the people in their beat.	1	2	3	4	5
b) Police officers should try to solve non-crime problems in their beat	1	2	3	4	5
c) Crime in their beat is not the only problem that police officers should be concerned about	1	2	3	4	5
d) Police officers should work with citizens to try and solve problems in their beat	1	2	3	4	5
e) Assisting citizens can be as important as enforcing the law	1	2	3	4	5
f) Citizens know more about what goes on in their area than the officers who patrol there	1	2	3	4	5
g) The prevention of crime is the joint responsibility of the community and the police	1	2	3	4	5
h) Lowering citizens' fear of crime should be just as high a priority for the department as cutting the crime rate	1	2	3	4	5
i) Without citizen cooperation, the majority of crimes would never be solved	1	2	3	4	5
j) Police officers should focus on solving crimes and apprehending offenders	1	2	3	4	5
k) Motorized patrol is important to deter crime	1	2	3	4	5
l) Police officers should check building and residence to struggle	1	2	3	4	5

with crime.

3- To what extent do you agree or disagree with the following statements related to Community Oriented Policing (COP)? Check the number that best corresponds to the level of your agreement with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) COP prevents street officers from performing more important activities, such as responding to emergency calls.	1	2	3	4	5
b) COP makes it easier for street officers to apprehend criminals.	1	2	3	4	5
c) COP takes good officers and turns them into social workers.	1	2	3	4	5
d) COP is just one more fad in policing and will soon be replaced by another fad.	1	2	3	4	5
e) COP does not provide officers with enough guidance for handling incidents.	1	2	3	4	5
f) In most cases, referring a citizen to social services, health, or welfare agencies is a waste of police officers' time.	1	2	3	4	5
g) COP puts more decision-making authority in the hands of the street officer.	1	2	3	4	5

4- To what extent do you agree or disagree with the following statements related to general patrol functions? Check the number that best corresponds to the level of your agreement with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Most people do not respect the police	1	2	3	4	5
b) The relationship between the police and the people is very good	1	2	3	4	5
c) Citizens do not understand the problems of the police	1	2	3	4	5
d) Most people have no idea of how difficult a police officer's job is	1	2	3	4	5
e) Citizens will never trust police enough to work together effectively	1	2	3	4	5
f) The public shows a lot of respect for law enforcement officers	1	2	3	4	5
g) The public is more apt to obstruct law enforcement work than to cooperate	1	2	3	4	5

5- How qualified do you feel to do each of the following? Check the number that best corresponds to the level of your qualification with each statement.

	Very Unqualified	Unqualified	Qualified	Very Qualified
a) Identify community problems	1	2	3	4
b) Use problem-solving techniques to analyze problems	1	2	3	4
c) Develop solutions to community problems	1	2	3	4
d) Evaluate solutions to see how well they work	1	2	3	4
e) Work with beat residents to solve problems in the neighborhood	1	2	3	4

THE ODDI CONTINUING LEARNING INVENTORY (OCLI)

For the purpose of this research, a royalty-free copyright license for the use of the OCLI was granted by Lorys F. Oddi. In the license agreement it is requested that "a copy of the OCLI will NOT be published or included with study report." Therefore, OCLI was not put into this appendix. This is the signed agreement:

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5. The Licensee shall provide Licensor with item scores and demographic data, which shall be used only for further development of the OCLI.

6. A copy of the OCLI will NOT be published or included with study report.

AGREED (*30 April, 2009*)

Lorys F. Oddi 4/29/2010

Lorys F. Oddi (Licensor)

Mustafa B. Halicioglu (Licensee)

ASSESSING THE LEARNING STRATEGIES OF ADULTS (ATLAS)

Directions: The following statements relate to learning in real-life situations in which you control the learning situation. For each statement, select the one answer that best fits you. Some of the items make look similar to you, so it is important that once you respond to an item, **do not go back and change any items**.

1- **When considering a new learning activity such as learning a new craft, hobby, or skill for use in my personal life:**

   a. I like to identify the best possible resources such as manuals, books, modern information sources, or experts for learning project.

   b. I usually will not begin the learning until I am convinced that I will enjoy it enough to successfully finish it.

2- **It is important for me to:**

   a. Focus on the end result and then set up a plan with such things as schedules and deadlines for learning it.

   b. Think of a variety of ways of learning the material.

3- **I like to:**

   a. Involve other people who know about the topic in my learning activity.

   b. Structure the information to be learned to help remind me that I can successfully complete the learning activity.

4- **I like to:**

   a. Set up a plan for the best way to proceed with a specific learning task.

   b. Check out the resources that I am going to use to make sure that they are the best ones for the learning task.

5- **I like to:**

   a. Involve other people who know about the topic in my learning activity.

   b. Determine the best way to proceed with a learning task by evaluating the results that I have already obtained during the learning task.

POSTTEST

The questionnaire delivered as a posttest was comprised of two parts: 1) general questions measuring officers' learning level, satisfaction with the training program, perceptions about the program, personal characteristics, and demographic characteristics; 2) The same COP related scales applied in the pretest.

Introduction: This questionnaire aims to evaluate success and effectiveness of the online Community Policing Training program through perspectives of the participants. Your answer will help us to understand real effectiveness of this program and to adjust it for next training programs. Because of this, please be objective and realist as possible when you answer each of the questions. It should be noted that the questionnaire is completely confidential.

START HERE:

1. The course that you have just completed is called online distance training through online technologies (internet/web). **Have you ever participated in any online training program before?**
   - ☐ Yes
   - ☐ No

2. **If your answer was "yes", what were they about? Please specify your answer in the blank below this question.**

3. **Please grade your computer and internet knowledge by circling one of the numbers below.** (This is a 10-point scale: whereas (1) refers to "I have no knowledge about computer and internet" 10 refers to "I am professional on computer and Internet").

I have no knowledge — I am professional

1 2 3 4 5 6 7 8 9 10

4. **Please indicate whether or not you know how to do each of the types of computer tasks listed below.** (Please select 1(yes) or 2 (no) for each item)

	Yes (Apply)	No (Not apply)
a) I know how to turn my computer system on and off properly	1	2
b) I know file management on my computer, such as moving files around different directories and drives, saving files, or deleting them.	1	2
c) I know how to use a web browser (e.g. Netscape or Internet explorer)	1	2
d) Know how to use a standard word processor, such as Microsoft word	1	2
e) Know how to provide a presentation using some kind of software (such as the PowerPoint program)	1	2
f) Know how to use Microsoft Excel and Excel functions	1	2
g) I am able to design a web page	1	2
h) I am able to write computer programs by using some other programs (such as visual basic)	1	2
i) I know more than previous items	1	2

If you know more than previous items, please specify in the blank. ☐

5. **During the training program that you have just completed, have you ever check the material in the web site of the course or watch the lessons that you missed or did not understand again?**

☐ Yes
☐ No

6. **If your answer is yes, how many times did you check the materials or watch the lesson out of the normal course hours during the training program.**

☐ 1 time
☐ 2 times
☐ 3 times
☐ 4 times
☐ More than 4 times

7. **To what extent do you agree or disagree with the following statements related to the online training program that you participated in? Select the number that best corresponds to the level of your agreement with each statement.**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) The training was effective in facilitating my learning.	1	2	3	4	5
b) I feel I learned a lot besides the normal course material.	1	2	3	4	5
c) My learning was hindered in this training program.	1	2	3	4	5
d) I was able to focus on the learning task in this training program.	1	2	3	4	5
e) This training program increased my knowledge level on community policing.	1	2	3	4	5

8. **To what extent do you agree or disagree with the following statements related to this online training program? Check the number that best corresponds to the level of your agreement with each statement.**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) I overall satisfied with this training program.	1	2	3	4	5
b) I desire to participate another distance online training program	1	2	3	4	5
c) This training program provided highly imported knowledge for me.	1	2	3	4	5
d) This training program was a waste of time.	1	2	3	4	5

9. **Out of the course times, to what extent you had opportunity to use computer and internet during the training program?** (You can think about your

accessibility to computer and internet both in your work environment and in your home).

- ☐ Very great extent
- ☐ To some extent
- ☐ A small extent
- ☐ Not at all

10. Which <u>one</u> of the following best describes your education level?

- ☐ High school
- ☐ Police school (1 year)
- ☐ Police school (2 year)
- ☐ Two-year University
- ☐ Police academy (4 year)
- ☐ Bachelor degree
- ☐ Master
- ☐ PhD or more

11. What is your age now?

_____ years old.

12. What is your gender?

- ☐ Male
- ☐ Female

13. Please specify your service year. How many years have you been working in Turkish National Police?

_____ year (s)

14. Which <u>one</u> of the following best describes your current rank?

- ☐ Police officer
- ☐ Sergeant
- ☐ Lieutenant
- ☐ Captain
- ☐ Major and above

15. Please specify your current assigned unit and city in the blanks below?

Unit:_____ City: _____

16. **Is your unit responsible for apply perspectives of community oriented policing?**

- ☐ Yes
- ☐ No
- ☐ Not sure

17. **Which <u>one</u> of the following best describes your marital status when you were taking that course?**

- ☐ Single
- ☐ Married
- ☐ Married with children
- ☐ Divorced
- ☐ Divorced with children

18. **If this community oriented policing training program was given both online and traditional face to face, which one would you want to participate? Why? Please chose one answer and then specify your reason in the blank area.**

- ☐ Online training program
- ☐ Traditional face to face training program

19. **So far, how many in-service training program offered online have you participated in?**

- ☐ Never
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5 or more

20. **So far, how many in-service training program offered face-to-face have you participated in?**

- ☐ 1-3
- ☐ 4-6
- ☐ 7-9
- ☐ 10-12
- ☐ 13 or more

21. **Have you ever participated in any COP training program before this online COP training program?**

    - ☐ Yes
    - ☐ No

22. **What were the <u>advantages</u> of the distance online training that you participated? Please list in the blank area**

23. **What were the <u>disadvantages</u> of the distance online training that you participated? Please list in the blank area.**

COMMUNITY ORIENTED POLICING RELATED QUESTIONS FOR POSTTEST

Direction: This part of the questionnaire aims to measure your knowledge about general policing activities and Community Oriented Policing. COP is acronym for Community Oriented Policing. Please be objective and realist as you possibly can when you answer the each question.

1- How much of the agency's/department's resources should be committed to the activities listed below? Please check the response that best describes your opinion.

	None	Small Amount	Moderate Amount	Large Amount
a) Patrolling on foot in neighborhoods	1	2	3	4
b) Marketing police service to the public	1	2	3	4
c) Explaining crime prevention techniques to citizens	1	2	3	4
d) Handling special events	1	2	3	4
e) Researching and solving problems	1	2	3	4
f) Coordinating with other agencies to improve the quality of life in the city	1	2	3	4
g) Working with citizen groups to resolve local problems	1	2	3	4
h) Assisting persons in emergencies	1	2	3	4
i) Helping settle family disputes	1	2	3	4
j) Responding to calls for service	1	2	3	4
k) Checking buildings and residences	1	2	3	4
l) Responding to crimes	1	2	3	4
m) Investigating criminal incidents	1	2	3	4
n) Traffic enforcement	1	2	3	4

2- To what extent do you agree or disagree with the following statements? Check the number that best corresponds to the level of your agreement with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Police officer should make frequent informal contacts with the people in their beat.	1	2	3	4	5
b) Police officers should try to solve non-crime problems in their beat	1	2	3	4	5
c) Crime in their beat is not the only problem that police officers should be concerned about	1	2	3	4	5
d) Police officers should work with citizens to try and solve problems in their beat	1	2	3	4	5
e) Assisting citizens can be as important as enforcing the law	1	2	3	4	5
f) Citizens know more about what goes on in their area than the officers who patrol there	1	2	3	4	5
g) The prevention of crime is the joint responsibility of the community and the police	1	2	3	4	5
h) Lowering citizens' fear of crime should be just as high a priority for the department as cutting the crime rate	1	2	3	4	5
i) Without citizen cooperation, the majority of crimes would never be solved	1	2	3	4	5
j) Police officers should focus on solving crimes and apprehending offenders	1	2	3	4	5

k) Motorized patrol is important to deter crime	1	2	3	4	5
l) Police officers should check building and residence to struggle with crime.	1	2	3	4	5

3- To what extent do you agree or disagree with the following statements related to Community Oriented Policing (COP)? Check the number that best corresponds to the level of your agreement with each statement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) COP prevents street officers from performing more important activities, such as responding to emergency calls.	1	2	3	4	5
b) COP makes it easier for street officers to apprehend criminals.	1	2	3	4	5
c) COP takes good officers and turns them into social workers.	1	2	3	4	5
d) COP is just one more fad in policing and will soon be replaced by another fad.	1	2	3	4	5
e) COP does not provide officers with enough guidance for handling incidents.	1	2	3	4	5
f) In most cases, referring a citizen to social services, health, or welfare agencies is a waste of police officers' time.	1	2	3	4	5
g) COP puts more decision-making authority in the hands	1	2	3	4	5

of the street officer.

4- **To what extent do you agree or disagree with the following statements related to general patrol functions? Check the number that best corresponds to the level of your agreement with each statement.**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Most people do not respect the police	1	2	3	4	5
b) The relationship between the police and the people is very good	1	2	3	4	5
c) Citizens do not understand the problems of the police	1	2	3	4	5
d) Most people have no idea of how difficult a police officer's job is	1	2	3	4	5
e) Citizens will never trust police enough to work together effectively	1	2	3	4	5
f) The public shows a lot of respect for law enforcement officers	1	2	3	4	5
g) The public is more apt to obstruct law enforcement work than to cooperate	1	2	3	4	5

5- **How qualified do you feel to do each of the following? Check the number that best corresponds to the level of your qualification with each statement.**

	Very Unqualified	Unqualified	Qualified	Very Qualified
a) Identify community problems	1	2	3	4
b) Use problem-solving techniques to analyze	1	2	3	4

problems

c) Develop solutions to community problems	1	2	3	4
d) Evaluate solutions to see how well they work	1	2	3	4
e) Work with beat residents to solve problems in the neighborhood	1	2	3	4

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