

Structured Design Strategies for Attitude Instruction

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### ABSTRACT

Social psychologists believe that attitudes occur both implicitly and explicitly suggesting that people can think, feel, and behave in ways that are counter to their outward views.

Researchers within the field of instructional technology have proposed treatments for explicit attitude manipulation within an instructional situation but have yet to implement strategies that encompass implicit attitudes. Researchers from both fields concur that attitudes are malleable and can be manipulated with appropriate intervention strategies (Bertrand et al., 2005; Dasgupta & Greenwald, 2001; Dick & Carey, 1996; Gagné, Briggs, & Wager, 1988; Kamradt & Kamradt, 1999; Krathwohl, Bloom, & Masia, 1964).

The purpose of this study was to investigate the effectiveness of instructional design strategies intended to influence implicit and explicit attitudes in the direction of a target attitude. The predominant strategies for attitude manipulation prescribed in the instructional design and technology literature were combined and adapted for online delivery. In addition, proven strategies from social psychology research were integrated into the existing instructional design strategies for implicit attitude manipulation. The independent variable for this experimental study consisted of the prescribed instructional strategies for influencing both implicit and explicit attitudes. For the purpose of this study, the attitude that the instruction was designed to address was the reduction of biased-based policing, thus, the dependent variables were implicit attitudes as measured by the Race Implicit Association Test (IAT), and explicit attitudes as measured by the Symbolic Racism Test 2000 (SR2K).

Fifty volunteers were randomly assigned to one of two instructional modules. One module served as a control for 25 of the participants. The second module served as a treatment for the remaining 25 participants. The treatment was based on the incorporation of the recommended strategies for attitudinal instruction found in the literature.

Implicit attitude assessment revealed that there was no statistically significant difference between the control and treatment groups as measured by the Race Implicit Association Test (Race IAT). Furthermore, explicit attitude assessment also revealed that there was no statistically significant difference between the control and treatment groups as measured by the Symbolic Racism Test 2000 (SR2K).

However, there were several limitations that may have affected the study. As a result, we still do not know for certain how the incorporation of attitudinal strategies within web-based instruction influence implicit and explicit attitudes.

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## Table of Contents

Abstract.....	ii
Acknowledgements.....	iv
Table of Contents.....	vi
List of Figure.....	viii
List of Tables .....	viii
<b>CHAPTER 1: INTRODUCTION .....</b>	<b>1</b>
Statement of the Problem.....	6
Purpose of the Study .....	7
Research Questions.....	7
Definition of Terms.....	8
Attitudes.....	8
Implicit Attitudes .....	8
Explicit Attitudes .....	8
Prejudice .....	8
Bias .....	9
Racial Profiling.....	9
<b>CHAPTER 2: LITERATURE REVIEW .....</b>	<b>10</b>
What Are Attitudes .....	10
Implicit and Explicit Attitudes.....	12
Attitudes and Behavior .....	14
Attitude Change Theories .....	17
Instructional Strategies for Attitudinal Instruction .....	21
Principles of Instructional Design.....	22
Principles for Attitude Change.....	25
Guidelines for Attitude Change .....	31
Structured Design for Attitudinal Instruction .....	33
Racial Profiling: An Area In Need of Attitude Change .....	46
Measuring Attitude Change .....	48
Summary of Literature Review.....	51
<b>CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY.....</b>	<b>55</b>
Problem and Purpose .....	55
Research Questions.....	55
Resarch Design .....	56
Research Participants .....	57
Data Collection Materials .....	58
Demographics Questionnaire.....	58
Symbolic Racism Test 2000 (SR2K).....	58
Race Implicit Association Test (Race IAT).....	59

Instructional Materials .....	60
Control Group Materials .....	60
Treatment Materials .....	61
Expert Review .....	64
Procedures .....	65
Data Analysis .....	67
CHAPTER 4: RESULTS .....	69
Research Question # 1 Implicit Attitudes .....	69
Research Question # 2 Explicit Attitudes .....	71
CHAPTER 5: DISCUSSION .....	73
Results Summary .....	74
Study Limitations .....	75
Conclusion .....	76
REFERENCES .....	77
APPENDICES .....	92
A IRB Approvals .....	92
B Bednar and Levie's (1993) 22 Principles For Attitude Change .....	93
C Instructional Intervention Process .....	95
D Implied Consent Form .....	103
E Expert Reviews .....	105
F Instructional Materials .....	108

List of Figures

*Figure 1.* Bednar and Levie’s (1993) Model of Dissonance Arousal and Reduction.....30

*Figure 2.* Kamradt and Kamradt (1999), Components and Structure of a Discrete Attitude. ....34

*Figure 3.* Kamradt and Kamradt (1999), Internal Consistency Versus Dissonance.....35

*Figure 4.* Kamradt and Kamradt (1999), Principle of Variable Proportion.....36

*Figure 5.* Kamradt and Kamradt (1999), Structured Design for Attitudinal Instruction.....37

*Figure 6.* Kamradt and Kamradt (1999), Revival Preacher Tactic, Debate Champion Tactic, and Dictator Tactic. ....39

*Figure 7.* Kamradt and Kamradt (1999), Attitude Shifts.....40

*Figure 8.* Integrated Strategies for Attitude Change.....60

*Figure 9.* Applied Model.....61

*Figure 10.* Selection of Attitudinal Components .....62

## List of Tables

<i>Table 1.</i> Research Procedure.....	57
<i>Table 2.</i> Raw group statistics for question 1 (IAT Dscore).....	70
<i>Table 3.</i> Raw independent samples <i>t</i> -test results for question 1 (IAT Dscore).....	70
<i>Table 4.</i> Raw group statistics for question 2 (SR2K).....	71
<i>Table 5.</i> Raw independent samples <i>t</i> -test results for question 2 (SR2K).....	72

## CHAPTER 1: INTRODUCTION

Many often-cited scholars in the field of instructional design and technology have emphasized the importance of attitude studies with regard to the instructional design process (Dick & Carey, 1996; Gagné, Briggs, & Wager, 1988; Kamradt & Kamradt, 1999; Krathwohl et al., 1964; Simonson & Maushak, 1996; Simonson, 1978; Simonson, 1983, Simonson, 1984; Simonson, 1985). According to Kamradt and Kamradt (1999) “This phenomenon reflects an important trend in the conduct of both business and education: the widespread recognition that attitude is a critically important success factor” (p. 565).

An in-depth review of the literature reveals that few studies in the field of instructional technology have examined attitudes and attitude manipulation. According to Simonson and Maushak (1996), “Of the hundreds of studies published in the literature of educational communications since [1979] less than 5% examined attitude variables as a major area of interest” (p. 996).

Theories and studies related to attitudes have evolved over the last 80 years. Research focusing on attitude manipulation spans different disciplines, but the field of social psychology has provided the most empirical studies to date. Simonson and Maushak (1996) pointed out that “Research on attitudes has been popular in many disciplines. However, the construct is considered to be more central to social psychology than any other academic area” (p. 985).

Educational technology and social psychology experts agree that attitudes are psychological constructs and functions of experience (Gagné et al., 1988; Greenwald & Banaji, 1995; Fishbein, 1963; Kamradt & Kamradt, 1999). Moreover, attitude formation commences in early childhood and can be influenced by environmental factors such as parents, peers, and the

media (Greenwald & Banaji, 1995). Gagné et al. (1988) defined an attitude as an internal state that affects an individual's choice of personal action toward some object, person, or event.

According to researchers in the field of educational technology, attitudes are psychological constructs made up of three components: emotional feelings (affective), thoughts and beliefs (cognitive), and actions or behaviors (behavioral or psychomotor) (Dick & Carey, 1996; Gagné et al., 1988; Kamradt & Kamradt, 1999; Krathwohl et al., 1964; Simonson & Maushak, 1996). Kamradt and Kamradt (1999) suggested that for an attitude change to occur, all three of these components must be treated. Kamradt and Kamradt constructed an instructional design model for attitude change which was designed to incrementally manipulate all three attitude components in the direction of the desired outcome.

Social psychologists believe that attitudes are both explicit and implicit in nature (Bertrand et al., 2005; Ewing, Allen, & Kardes, 2008; Greenwald & Banaji, 1995). Explicit attitudes are considered to be an individual's open or conscious attitudes towards people, ideas, or objects (Ajzen, 1996; Greenwald & Banaji, 1995; Wood, 2000). Implicit attitudes are considered to be hidden or even unconscious attitudes that a person may not be aware of (Greenwald et al., 1998). Researchers in the field of social psychology suggest that these unconscious or hidden attitudes are measurable and affect how individuals make everyday decisions that guide their behaviors (Stepanikova, Triplett, & Simpson, 2011). Additionally, studies within the field of social psychology have provided evidence that implicit attitudes are malleable and can be manipulated. While the existing studies within the field of instructional design and technology have focused on explicit attitude manipulation, prior to this study none have examined factors related to implicit attitudes.

Only a handful of strategies for attitude manipulation have evolved from the field of instructional design and technology. The following strategies for attitude manipulation are predominant in the field.

- Gagné et al. (1988) proposed four steps, or strategies, for changing attitudes using credible human exemplars to model the target behavior. These strategies were based on Bandura's (1977) social learning theory. Gagné required the model to be someone who is respected, relative, important, powerful, and influential. The exemplar may even be fictitious as long as he or she is powerful and effective.
- Instructional designers Bednar and Levie (1993) designed 22 research-based instructional guidelines for changing attitudes. Bednar and Levie also established "principles related to modeling of appropriate behaviors, and they concluded with principles related to creating and managing dissonance" (p. 34). Much like Gagné et al., Bednar and Levie based five of their 22 guidelines for attitude change on Bandura's (1977) social learning theory as they implemented modeling as a strategy for changing attitudes. Of the 22 guidelines, the first 11 were based on communication theory, the next five on Bandura's social learning theory, and the last six on cognitive dissonance theory.
- Simonson and Maushak (1996) also constructed six guidelines for attitude change that focused primarily on mediated instruction. Simonson validated his guidelines by using Bednar and Levie's guidelines for attitude change as a guide.
- Finally, Kamradt and Kamradt (1999) constructed a model for attitude change called structured design for attitudinal instruction. The goal of Kamradt and

Kamradt's theory is to help a learner change an attitude particularly when the learner is willing to consider changing the existing attitude.

Although these strategies were derived from studies conducted by social psychologists and have theoretical underpinnings in the field of social psychology, there have been few attempts to empirically test these approaches in an instructional setting.

However, instruction targeting attitude manipulation is common in the workplace today. Training initiatives to address issues such as equality, social justice, tolerance, and race relations are increasing in a variety of settings. One of the fastest growing and most controversial issues being addressed is racial profiling (Fridell, Lunney, Diamond, & Kubu, 2001; Marquis, Marquis, & Polich, 1986; Ross, 2008; Rudman, Ashmore, & Gary, 2001). Training programs are being implemented to inform, educate, and ultimately alter beliefs regarding racial bias and profiling. Integrating instructional design strategies for attitude manipulation into existing training programs is not only beneficial but imperative to this initiative.

Social psychologists believe that implicit, or unconscious, attitudes regarding race preferences can lead to biased decisions and result in racial stereotyping or profiling, even in the presence of explicit, or conscious, tolerance (Greenwald, McGee, & Schwartz, 1998; Greenwald, Nosek, & Banaji, 2003; Kamradt & Kamradt, 1999; Rudman et al., 2001). Furthermore, current literature on implicit and explicit attitude manipulation suggests that some strategies can be successful in reducing both implicit and explicit anti-minority attitudes (Bertrand et al., 2005; Rudman et al., 2001). For example, several empirical studies from social psychology have indicated that exposing White participants to powerful or well-liked minority exemplars can reduce implicit anti-minority attitudes (Bertrand et al., 2005; Rudman et al., 2001). In some of these studies, simply showing photographs of admired African Americans has improved implicit

anti-minority attitudes (Bertrand et al., 2005; Dasgupta & Greenwald, 2001; Rudman et al., 2001). These studies suggested that modeling favorable feelings toward admired minority exemplars can be an effective strategy in reducing implicit anti-minority attitudes. Some studies provided evidence that combining resented Caucasian exemplars (e.g., Timothy McVeigh, Ted Bundy, or Jeffrey Dahmer) with powerful, well-liked minority exemplars (e.g., Bill Cosby or Denzel Washington) was even more effective in changing participants' implicit anti-minority attitudes (Dasgupta & Greenwald, 2001; Rudman et al., 2001).

Simonson and Maushak (1996) also discussed some of the various acceptable types of attitude measurements. The most noted and widely used instruments appearing in the literature have been self-reporting questionnaires using the Likert rating scale (McLeod, 2008; Nighswonger, & Martin, 1981). One of the most-cited self-reporting instruments for measuring race-related attitudes is the Symbolic Racism Test 2000, or SR2K. The SR2K is an eight-question self-reporting instrument in which items are measured on a 4-point Likert scale (Sears & Henry, 2005, p. 1). Recently, social psychologists have suggested that using self-reporting instruments alone for measuring attitudes is not always reliable and suggested that additional methods be employed, particularly for implicit attitudes (Schwarz & Bohner, 2001). The Implicit Association Test (IAT) is currently the most widely used and validated rapid response instrument for measuring implicit attitudes regarding racial bias.

This study focused on implementing an intervention that was based on instructional design theory, research, and strategies to manipulate both explicit and implicit attitudes. Kamradt and Kamradt's (1999) structured design model for attitudinal instruction was adapted to fit a fully asynchronous online environment. Furthermore, the predominant instructional design strategies for attitude manipulation that have emerged from the literature were combined with

strategies from social psychology for improving implicit attitudes and integrated into Kamradt and Kamradt's structured design model.

Additionally, the study satisfied the recommendations by Simonson and Maushak regarding quality attitude research within the field of instructional design and technology. The study consisted of quantitative methods with clearly defined variables, research questions, and a control group.

Finally, this was the first study within the field of instructional design and technology to examine implicit attitudes. In this way, this effort contributed to and extended the existing body of literature regarding attitude manipulation in the field of instructional design and technology.

### **Statement of the Problem**

Historically, there have been very few empirical research efforts within the field of instructional design and technology that have targeted attitude manipulation in an instructional context (Bednar & Levie, 1993; Kamradt & Kamradt, 1999; Simonson & Maushak, 1996). Simonson and Maushak (1996), via their review of studies within the field, concluded that less than 5% were concerned with attitudes. As a result, there exists a dearth of empirically validated strategies available to instructional designers and practitioners currently in the field. Furthermore, prior to this study, existing research focused only on explicit attitude manipulation as no prior studies in the field of instructional design and technology have addressed implicit attitudes. Although strategies for attitude manipulation within the field have strong empirical and theoretical underpinnings, there have been limited efforts to further test the existing strategies and extend the work of those who have already contributed to the research base. A variety of noted educational researchers have emphasized the importance of attitude research to the field.

## **Purpose of the Study**

The purpose of this experimental study was to investigate the effectiveness of instructional design strategies intended to influence implicit attitudes in the direction of the target attitude as measured by the Race Implicit Association Test (Race IAT; Greenwald et al., 1998) and explicit attitudes as measured by the Symbolic Racism Test 2000 (SR2K; Henry & Sears, 2002).

Existing strategies were combined, adapted for online delivery, and implemented within an instructional setting to influence both implicit and explicit attitudes. The results of this study provided insight into attitude manipulation within an instructional context as well as extended the existing empirical work conducted in the field of instructional design and technology.

## **Research Questions**

This experimental study has two research questions:

1. Will the incorporation of attitudinal strategies within web-based instruction influence the participants' implicit attitudes, as measured by the Race Implicit Association Test (Race IAT)?
2. Will the incorporation of attitudinal strategies within web-based instruction influence the participants' explicit attitudes, as measured by the Symbolic Racism Test 2000 (SR2K)?

## **Definition of Terms**

### **Attitudes**

A state of mind, way of thinking, or feeling that can be positive or negative and is usually reflected in a person's behavior.

### **Implicit attitudes**

Implicit attitudes are "Unacknowledged attitudes external to a person's awareness which nonetheless have measurable effects on people's response times to stimuli" (Grinnell, 2009a, para. 1).

### **Explicit attitudes**

Explicit attitudes are "A person's conscious views toward people, objects, or concepts. That is, the person is aware of the feelings he or she holds in a certain context" (Grinnell, 2009b, para. 1).

### **Prejudice**

"An unfair, intolerant, or unfavorable attitude toward a group of people... Social scientists view prejudice as the possession of negative attitudes targeted against members of a particular religious, racial, ethnic, social, and/or political group" (Prejudice, 2011, para. 1). Allport (1954) provided a classic definition as he defined prejudice as "an antipathy based on faulty and inflexible generalization. It may be felt or expressed. It may be directed toward a group or an individual of that group" (p. 4). The majority of experts suggest that prejudices are many times irrational, preconceived, negative notions or prejudgments about others. These notions or judgments, many of which are learned during childhood, lead to stereotyping.

## **Bias**

An “inclination or prejudice for or against one person or group, especially in a way considered to be unfair” (Bias, 2011, para. 1).

Charles, Ioimo, Tears, and Becton (2004) stated that “Bias takes many forms and it is not always racial bias that is an issue. Religious bias, sexual bias, cultural bias, and other forms of bias are also part of the social equation” (p. 21).

For the purpose of this study, the term bias will be defined as unfair prejudiced notions, opinions, or ideas about a group of individuals based on race.

## **Racial Profiling**

“The act or process of extrapolating information about a person based on known traits or tendencies <consumer *profiling*>; *specifically*: the act of suspecting or targeting a person on the basis of observed characteristics or behavior <racial *profiling*>” (Profiling, 2011, para. 1).

## **CHAPTER 2: LITERATURE REVIEW**

Simonson and Maushak (1996) pointed out that “Research on attitudes has been popular in many disciplines. However, the construct is considered to be more central to social psychology than any other academic area” (p. 985). Attitudes has been the subject of study for more than 80 years, particularly in the field of social psychology (Hughes, Barnes-Holmes, & Houwer, 2011).

This chapter provides a history and description of what attitudes are, how they relate to behavior, attitude theories, instructional strategies, studies within the field of instructional design and technology, an area for needed instructional attitude interventions, and measurement for attitudes.

### **What Are Attitudes**

Educational technology and social psychology experts agree that attitudes are functions of experience (Gagné et al., 1988; Greenwald & Banaji, 1995; Fishbein, 1963; Kamradt & Kamradt, 1999). Moreover, attitude formation commences in early childhood and can be influenced by parents, siblings, peers, and the media (Greenwald & Banaji, 1995). Some experts have even indicated that hereditary factors may have some bearing on attitude formation (Tesser, 1993). Gagné, Briggs, & Wager, (1988) define an attitude as an internal state that affects an individual’s choice of personal action toward some object, person, or event.

Furthermore, theorists from various disciplines concur that attitudes comprise three domains: cognitive (thinking), affective (feeling), and psychomotor (behavioral; Bertrand, Chugh, & Mullainathan, 2005). Social psychologists typically examine attitudes based on these three domains, which are also predominant in instructional theories, such as Bloom’s Taxonomy

(Krathwohl, Bloom, & Masia, 1973). Researchers within the field of instructional design and technology also separate instructional objectives into the same three categories (Dick & Carey, 1996; Gagné et al., 1988; Kamradt & Kamradt, 1999; Krathwohl et al., 1964). For example, Kamradt and Kamradt (1999) consider attitudes to be “a psychophysical structure that stores related bits of affective, cognitive, and psychomotor learning in a manner that allows instantaneous, subconscious access by its owner” (p. 570). In addition, Kamradt and Kamradt pointed out that this psychophysical structure serves as a tool that helps an individual adapt quickly to environmental situations pursuant to satisfaction of personal needs. Meanwhile, other definitions of attitudes addressed in the literature vary based on the discipline and context.

As attitudes are not directly observable, the term can be difficult to define. Social psychologist Gordon Allport defined *attitude* as “a mental and neural state of readiness to respond, organized through experience and exerting a directive and/or dynamic influence upon the individual, responding to all objects and situations with which it is related” (Allport, 1935, as cited in Flemming, 2005, p. 351). Martin Fishbein (1963), also a social psychologist, contended that “attitudes toward an object are a function of (1) salient beliefs about the object and (2) the evaluative aspects of those beliefs” (p. 219). Ajzen and Fishbein (1980) later gave the following operational definition of attitudes: “complex systems comprising the person’s beliefs about the object, his feelings towards the object, and his action tendencies with respect to the object” (p. 19). Individuals can possess both positive and negative views of a given object.

Zimbardo and Gerrig (1999) best summarized the predominant definition of attitudes within the social psychology literature by defining attitudes as “positive or negative evaluation of people, objects, event, activities, ideas, or just about anything in your environment” (p. 745). As they relate to this study, attitudes are considered to be negative or positive evaluations about

people, places, or ideas that are reflected in one's behaviors and are stored as affective, cognitive, and psychomotor components that are instantaneously accessible (Fishbein, 1963; Kamradt & Kamradt, 1999; Zimbardo & Gerrig, 1999).

### **Implicit and Explicit Attitudes**

Many social psychologists believe that attitudes are both explicit and implicit in nature (Bertrand et al., 2005; Ewing, Allen, & Kardes, 2008; Greenwald & Banaji, 1995). Explicit attitudes refer to an individual's conscious attitudes towards people, ideas, or objects. Typically individuals are aware of and openly acknowledge their explicit attitudes (Ajzen, 1996; Greenwald & Banaji, 1995; Grinnell, 2009b; Wood, 2000). In contrast, implicit attitudes are considered to be unconscious or unacknowledged attitudes of which a person may not be aware (Greenwald et al., 1998; Grinnell, 2009b).

Two of the leading experts on the subject, Greenwald and Banaji (1995), defined implicit attitudes as "introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects" (p. 8). As indicated by the various definitions, *implicit attitudes* are those that are hidden within the subconscious and have been learned throughout the lifespan. For example, an individual may be a member of a particular religion yet subconsciously or unknowingly gravitate toward non-religious ideas.

There is a growing body of research focused on how these unconscious or hidden attitudes affect affect daily decision making in individuals. Researchers have also suggested that implicit attitudes are typically unobservable but are measurable (Stepanikova, Triplett, & Simpson, 2011). The idea of measuring implicit attitudes has provided a significant number of research opportunities and has greatly extended previous work on attitude manipulation in the

field of social psychology. Ewing, Allen, and Kardes (2008) explained that, “The notion of implicit attitudes may not be new, but their uniqueness, function, and development present many research opportunities” (p. 593).

Additionally, studies within the field of social psychology have provided evidence that implicit attitudes can be manipulated. For example, according to Bertrand et al. (2005), one study examined White participants who were told that they were going to be working with an African American who was either going to be their subordinate or superior. Those who thought that they were going to have an African American individual as their superior showed more positive implicit attitudes toward African Americans than those expecting an African American subordinate. Bertrand et al. also noted another study in which simply showing participants photos of admired African Americans (e.g., Bill Cosby or Denzel Washington) improved anti-African-American implicit attitudes for up to 24 hours. Another study by Dasgupta and Greenwald (2001) demonstrated how using priming effects with exemplars can influence attitudes regarding race. When exposed to positive African-American exemplars and negative Caucasian exemplars the Race Implicit Association Test (IAT) indicated that participants reduced their anti-African-American attitudes both immediately and for up to 24 hours (Dasgupta & Greenwald, 2001). Finally, a study by Blair, Ma, and Lenton (2001) recorded a reduction in implicit gender stereotyping when participants were asked to imagine strong versus fragile women as part of the experiment.

Implicit attitudes are typically very different from outwardly or intentionally expressed attitudes. Attitudes that are expressed intentionally are called explicit attitudes. According to Payne, Burkley, and Stokes (2008), “Explicit attitudes are those expressed intentionally; implicit attitudes are those expressed despite intentions” (p. 29). Researchers have traditionally defined

explicit attitudes as deliberate and controlled evaluations or judgments (Greenwald & Banaji, 1995). Individuals have explicit or intentional conscious feelings about certain topics. For example, a person may have strong feelings about politics, labor unions, or religion and may communicate associated attitudes to others.

Research suggests that explicit attitudes are more easily influenced and less resistant to change than are implicit attitudes (Carpenter & Banaji, 2001; Dasgupta & Greenwald, 2001). “Existing research suggests that implicit attitudes emerge from automatic affective reactions while explicit attitudes are more propositional or cognitive in orientation” (Ewing, Allen, & Kardes, 2008, p. 593). Explicit attitudes differ in a number of ways from implicit attitudes (Ajzen, 1996; Greenwald & Banaji, 1995; Wood, 2000). For example, according to Wood (2000), “Explicit and implicit measures of racial prejudice are only moderately correlated because people are more likely to base explicit judgments on an egalitarian ideology; thus explicit attitudes toward racial minorities are more favorable than implicit ones” (p. 549).

Despite the nature of an attitude or whether or not an attitude is expressed implicitly or explicitly, early attitude change theorists debated the role that attitudes played in regard to actions or behaviors.

### **Attitudes and Behavior**

One of the earliest debates among researchers examining attitude manipulation was related to whether or not attitudes can predict behavior. Some theorists contended that when attitude change occurs, the associated behavior should change to align with the newly formed attitude. For example, when a non-minority’s attitude regarding racism improves, the corresponding behavior should reflect a greater tolerance for minorities. Other theorists proposed that the relationship between attitudes and behavior is little to nonexistent (Wicker, 1969).

Wicker (1969) published a much-debated and frequently cited article within the social psychology literature about the connection between verbal expressions of attitudes and overt behaviors, and contended that attitudes are not directly related to behaviors. Wicker's publication provided empirical data from several studies that rejected the idea of an attitude-behavior connection. For example, LaPiere studied how a Chinese couple was treated when he accompanied them to 251 hotels across the United States (LaPiere, 1934, as cited in Wicker, 1969, p. 42). Wicker noted that despite the anti-Chinese sentiment during that period all but one of the hotel owners treated the couple with respect. Later when LaPiere surveyed the same hotel owners 92% stated that they would not serve those of Asian descent. Overall, Wicker reviewed 42 experimental studies that focused on how attitudes relate to behavior and concluded that attitudes were either unrelated or, at best, only slightly related, to behavior (Wicker, 1969, as cited in Simonson & Maushak, 1996, p. 993).

Several social psychology experts have since questioned Wicker's methods despite an initial acceptance of his ideas. Wicker's review was criticized as most of the research he examined was based on laboratory experiments taken from a small sample of studies (Simonson & Maushak, 1996). "Many outstanding studies were not examined by Wicker, and several writers who reviewed survey research reported that this literature showed a moderately strong relationship between attitudes and behaviors"(Simonson & Maushak, 1996, p. 993). Nevertheless, Wicker's studies have yielded important insight into the attitude change debate and have provided a foundation for others to build upon as research efforts into the subject continued. In the decades following Wicker's review, theorists such as Fishbein and Ajzen and later Eagly and Chaiken continued to examine the attitude-behavior relationship.

Fishbein and Ajzen (1975) suggested that specific attitudes can predict specific actions or behaviors when behavioral intentions are included and the attitudes and behavioral intentions are compatible. According to the *theory of reasoned action* the more compatible the attitude and related behavioral intention, the stronger the relationship between the two. Fishbein and Ajzen looked at three interconnected factors that determine an actual behavior. First, attitudes, or the culmination of an individual's existing beliefs, may be evaluated to determine the action. For example, a person may believe that studying for math is important. The individual may also think that studying for math is boring, time consuming, or a worthwhile endeavor. These beliefs must be weighed to determine whether attitudes will be a determining factor with regard to the action. Next, subjective norms or the influences of one's social environment are a factor related to behavior. If an individual's friends find studying math to be stimulating and important, then this can affect the decision to perform the behavior. Finally, intended behaviors are a combination of existing attitudes and subjective norms toward a behavior. When these factors influence the behavioral intention in one direction or another, the actual behavior is more predictable. Hence, Fishbein and Ajzen, concluded that attitudes indirectly affect behavior.

Ajzen (1991) later added another predicting factor to his original *theory of reasoned action*, which he called *perceived behavioral control*. According to K. Miller (2005), "This addition was made to account for times when people have the intention of carrying out a behavior, but the actual behavior is thwarted because they lack confidence or control over behavior" (p. 127). For example, an individual may want to learn how to swim and may even be provided with the resources and opportunity to do so but will not follow through because of an intense fear of water. Because of the revision which included adding the additional predicting factor Ajzen renamed his *theory of reasoned action* to the *theory of planned behavior*.

Furthermore, Eagly and Chaiken (1993) created an attitude-behavior model that also suggested behaviors were at least partially affected by attitudes along with other important factors, such as habits, utilitarian outcomes, normative outcomes, and self-identity outcomes.

Ultimately, studies that have focused on the attitude-behavior connection have provided valuable insights regarding attitude manipulation and have contributed to the overall evolution of the attitude change theory base.

### **Attitude Change Theories**

Numerous theories on attitude change have evolved over the last 80 years. Although various disciplines, such as communication persuasion, journalism, advertising, marketing, and education, have provided studies that have been both beneficial and influential with regard to attitude change, social psychology has contributed the most to the theoretical base.

Learning theories, which were a popular way to explain attitude change during the 1950s and 1960s, focused on behavioral reinforcement or incentives as motivators for attitudes to change (Simonson & Maushak, 1996). Hovland, Janis, and Kelley greatly influenced learning theories with their focus on attitude change via their Yale Communication Research Program (Hovland, Janis, and Kelley, 1953, as cited in Simonson & Maushak, 1996, p. 990). Hovland et al. proposed that a communicator's message must be paid attention to, comprehended, and accepted by the recipient before an attitude change can occur. According to Hovland et al., attitude change is even more likely to occur if there are incentives involved, such as money, health, fitness, material gain, or even acceptance by credible and respected individuals. Hovland et al. also emphasized three important variables for a message to effectively change attitudes: how the message is communicated, the setting in which the message takes place, and the person delivering the message. Source credibility, or the credibility of the individual delivering the

message, has also been noted in other attitude change theories and associated strategies such as social learning theory (Bandura, 1977), Bednar and Levie's (1993) 22 attitude change principles, and Gagnés principles of instructional design (Bandura, 1977; Gagné et al., 1988; Simonson & Maushak, 1996). Although not widely accepted today, early learning theorists laid some important groundwork for future attitude theorists (Simonson & Maushak, 1996).

Consistency theories suggest that there must be consistency, balance, and equilibrium between attitudes and beliefs (Simonson & Maushak, 1996; Zimbardo & Leippe, 1991). Presenting new information in the form of a persuasive message can lead to an unbalanced effect between attitudes and beliefs about an event, object (idea), or individual that causes the recipient to strive toward consistency, again resulting in attitude change (Zimbardo & Leippe, 1991). Heider's balance theory is one of the earliest examples of a consistency theory (Heider, 1958, as cited in Simonson & Maushak, 1996, p. 989). Balance theory proposes that two people have balance if they agree on certain topics but are unbalanced if they disagree; therefore, people are constantly trying to either persuade themselves or the other person in an attempt to create balance or harmony. Later, Abelson and Rosenberg extended Heider's work with their affective-cognitive consistency theory, which proposed that individuals are unbalanced when their attitudes and knowledge about a person, place, or idea are not consistent (Abelson and Rosenberg, 1958, as cited in Simonson & Maushak, 1996, p. 989). According to Abelson and Rosenberg, when new information is presented about a person, place, or object (idea) that can change the conscious reasoning part of the thinking process, an overall attitude change occurs.

Around the same time that Abelson and Rosenberg proposed their affective-cognitive consistency theory, Festinger (1957) proposed his cognitive dissonance theory. Festinger focused on consistencies about an individual's beliefs about his or her own self, surroundings or

environment, or behaviors. According to Festinger, dissonance occurs when something is illogical or inconsistent with previous beliefs, experiences, or information. An attitude change occurs when an individual attempts to lower this dissonance by changing his or her attitude. Simonson and Maushak (1996) contended that one of the major problems with consistency theories is that there are too many and they need to be condensed into one overarching theory.

Social judgment theories are concerned with attitudes that are based on past or existing attitudes that can change if the message falls into the recipient's latitude of acceptance (Smith & Ragan, 1999). If the message is too extreme, then an attitude change is less likely to occur, while a more moderate message that falls within the latitude of acceptance is more likely to result in an attitude change (Simonson & Maushak, 1996; Smith & Ragan, 1999). According to Bednar and Levie (1993), "The use of successive approximations can expand the latitude of acceptance and thereby permit greater attitude change than might otherwise be possible" (p. 295).

Social learning theory, proposed by Albert Bandura (1977), is one of the most important and influential learning theories to date. According to Bandura, learning occurs by observing and modeling or imitating others as models or exemplars. The models can be real or fictitious and can be presented face-to-face or via media, but must be credible, powerful, and trustworthy to effectively change the recipient's attitude (Bandura, 1977; Bednar & Levie, 1993; Gagné et al., 1988; Greenwald & Banaji, 1995; Simonson & Maushak, 1996; Simonson, 1979). According to Martin and Briggs (1986), the model "can be presented on film, by television, in a novel, or by other vicarious means" (p. 28).

Functional theories are concerned with determining which psychological needs are being met in order to change a given attitude. According to Simonson and Maushak (1996), "Functional theories of attitude entered the literature in the 1950s when researchers developed

the idea that attitudes served varying psychological needs and thus had variable motivational bases” (p. 991). Understanding the function of an attitude is important information for an instructional designer when developing a persuasive message for instruction (Simonson & Maushak, 1996). Katz proposed four personality functions of attitudes (Katz, 1960, as cited in Simonson & Maushak, 1996, p. 992):

- Utilitarian function is behaviorist in nature as the individual seeks rewards or positive experiences and attempts to avoid punishment or negative situations within his or her environment.
- The knowledge function of an attitude occurs when an individual attempts to satisfy the need to organize ideas into rational logical categories. This is a way to simplify complex ideas into simple attitudes. For example, if a learner’s attitude is positive about reading, then when asked about books he or she will communicate about reading a book in a positive light.
- An ego-defensive function is an individual’s need to protect his or her own opinions, biases, or ideas despite evidence to the contrary. For example, people who are biased against a specific group of people may realize at some point that they are wrong and acting unfairly, but will protect their stance via denial or repression.
- The value-expressive function of attitudes allows individuals to express themselves on a specific issue or belief. For example, a person who is religious feels the need to express him or herself.

Although several of the earlier attitude change theories lost momentum in recent decades, functional theories are still considered to be valuable today (Eagly & Chaiken, 1993; Newbill, 2005; Simonson & Maushak, 1996).

Petty and Cacioppo's (1986) Elaboration Likelihood Model (ELM) combined the attitude-behavior connection with functional attitude theory and served as a foundational basis for the persuasion research conducted from the late 1980s through the 1990s. This model is still considered to be an important resource for current attitude research efforts. Petty and Cacioppo, via their model, suggested that attitude change was more permanent when people rationalized the reasoning behind their attitude change. Petty and Cacioppo separated attitude change into two categories: centrally processed factors and peripheral factors. Centrally processed factors consisted of the process of rationalizing or understanding the reason for an attitude change. Peripheral factors consisted of what Petty and Cacioppo considered to be less important factors, such as source attractiveness and mood of the participant. Petty and Cacioppo considered the central route factors to be the most effective in changing attitudes.

Over time many theorists have also proposed that attitudes are malleable and can be manipulated (Bandura, 1977; Dasgupta & Greenwald, 2001). As a result of this proposition, several strategies have emerged from the evolving theory base with an emphasis on attitude manipulation. Furthermore, many of these strategies were designed for implementation within an instructional setting such as of Gagné's (1988) principles of instructional design, Bednar and Levie's (1993) 22 attitude change principles, Simonson and Maushak's (1996) guidelines for attitude change, and Kamradt and Kamradt's (1999) structured design for attitudinal instruction.

### **Instructional Strategies for Attitudinal Instruction**

This section is concerned with instructional strategies for attitude change that have evolved within the field of instructional technology, including the supporting theories and empirical research on which they are based. Many of the models, guidelines, and

recommendations within the instructional design literature are supported by empirical studies from other disciplines, such as social psychology and communication persuasion.

The following models, strategies, principles, and guidelines are the most emergent examples within the instructional design and technology literature base to date.

### **Principles of Instructional Design**

Robert Gagné (1972) proposed five learning capabilities or domains of learning within his taxonomy of learning outcomes. The five domains consisted of 1) intellectual skills, 2) cognitive strategies, 3) verbal information, 4), motor skills and 5) attitudes. Gagné considered an attitude to be an internal state affecting a person's choice of actions toward some person, event, object, or idea. Gagné outlined four steps designed for attitudinal changes which were to occur via the recipient modeling the target attitudes and behaviors of an influential exemplar. His four steps for modeling for attitude change are as follows:

1. Presentation of the model and establishment of the model's appeal and credibility.
2. Recall by the learner of knowledge of the situations to which the attitude applies.
3. Communication or demonstration by the model of the desired choices of personal action.
4. Communication or demonstration that the model obtains pleasure or satisfaction with the outcome of the behavior. This step is expected to lead to vicarious reinforcement on the part of the learner.

According to Gagné et al., (1988) strategies for establishing the desired attitudes differed from the methods used to teach intellectual and cognitive skills as he contended that attitudes cannot be taught. The target attitudes can only be obtained by observing and modeling others (such as peers) reflecting over the outcomes of the observed behaviors, and from reinforcement

by others who agree with and support the resulting behaviors. Gagné stated, “One of the most effective ways of changing attitudes would appear to be by means of the human model, and the vicarious reinforcement” (p. 92).

Vicarious reinforcement, introduced by Bandura (1977) as part of his social learning theory, refers to an individual’s tendency to observe, interpret, and imitate others’ behaviors without experiencing first-hand the actual punishments and rewards resulting from the behavior. Albert Bandura performed a series of controversial studies during the 1960’s in which he examined children’s behaviors after being exposed to models exhibiting aggressive behavior. Bandura, in his first experiment, focused on a group of nursery school-aged children as they reacted to an adult repeatedly hitting, kicking, and sitting on an inflatable Bobo doll (Bandura, Ross, & Ross, 1961). Bandura placed the 72 children into five different groups. One group consisted of 24 children who observed an adult model displaying aggressive behavior. Of this group of 24 children 12 observed an adult model who was the same sex while the other 12 observed an adult model who was the opposite sex. Next, another group of 24 children observed a non-aggressive adult model. Again, this group was divided up so that 12 children observed an adult model who was the same sex while the remaining 12 observed a model of the opposite sex. Finally, the remaining 24 children were placed in a control group. Bandura et al. (1961) found that the 24 children who were exposed to the aggressive exemplars exhibited a higher level of physical aggression than those who were not exposed. Furthermore, he found that those who were exposed to aggressive exemplars of the same gender exhibited the highest level of physical aggression. The results of the study provided significant evidence that attitudes and behaviors can be modeled. Bandura followed up with a similar study in 1965 where one group of children was punished for aggressive behavior and the other group was rewarded for aggressive behavior.

Children who witnessed the children being punished for aggressive behavior were much less aggressive than children who observed the models being rewarded for aggression.

Future studies would support Bandura's original findings regarding the use of models for attitude change. For example, Friedrich and Stein's (1972) Mister Rogers study replicated Bandura's work. Mister Rogers Neighborhood was a television show that aired during the 1970's and 80's where the host, Mr. Rogers, acted as an exemplar promoting kindness, honesty, and openness. The students, who were from lower socioeconomic families, were directed to watch Mister Rogers for 4 weeks resulting in increased openness about feelings.

Modeling seems effective for implicit attitude manipulation as well. Social psychologists Dasgupta and Greenwald (2001) conducted studies measuring implicit race attitudes and "found that presenting participants with exemplars of admired African-American individuals (e.g., Martin Luther King, Jr., Denzel Washington) and disliked White individuals (e.g., Jeffrey Dahmer, Ted Kaczynski) was able to reduce implicit anti-African-American attitudes—an effect that remained detectable for at least 24 hours" (Carpenter & Banaji, 2001, p. 2). Dasgupta and Greenwald (2001) replicated the same approach and results with a study that tested the domain of attitudes toward the elderly.

Recently, Fox and Bailenson (2009) conducted a series of studies using Immersive Virtual Environment Technology (IVET) to test the effects of Bandura's vicarious reinforcement on health and exercise behaviors. Fox and Bailenson found that in all three of their studies, participants' health and exercise behaviors improved significantly after exposure to a credible exemplar.

After performing an in-depth review of existing attitude research in the instructional technology literature, Simonson and Maushak (1996) cited several concerns regarding the quality

of attitude studies conducted in the field. Of particular concern was the methodology and measurement procedures outlined in many of the studies emanating from the literature. Simonson and Maushak indicated that many of the existing studies were lacking in terms of validation, defining of variables, statistical methods, measurement, and reporting. They argued that sound quantitative studies that are replicable are more appropriate for quality attitude research in the field. Simonson and Maushak also pointed out that qualitative research “may be contributing to a decline in the quality of attitude testing” (p. 994).

Although Gagné’s four steps for modeling for attitude change are based on Bandura’s work, which is supported by a history of empirical studies, his specific steps, as indicated by a review of the literature, have not been empirically tested. Nevertheless, future instructional technology theorists, such as Bednar and Levie (1993), would base their attitude change strategies on Gagné’s work in addition to empirical studies from social psychology and communication persuasion.

### **Principles for Attitude Change**

Anne Bednar and Howard Levie (1993) proposed 22 principles for attitude change (see Appendix B) based on and supported by previous studies from communication, social learning, and cognitive dissonance theories. The principles originally proposed by Bednar and Levie are listed in the *AECT Handbook of Research* and are outlined in more detail in Fleming and Levie’s (1993) book on instructional message design .

According to Bednar and Levie (1993), designing persuasive messages involves a “SOURCE who presents a MESSAGE through a CHANNEL to a RECIEVER” (p. 286). Bednar and Levie based their principles, 1 and 2, (see Appendix B) regarding credibility and attractiveness on a study conducted by Singletary (1976), where participants were asked to

determine the characteristics that would result in the most credible source (i.e., person) to deliver news and information. Six important source characteristics emerged from Singletary's study, which included trustworthiness, articulation, stability, attraction, hostility, and knowledgeability, with knowledgeability being the most important trait. Furthermore, Bednar and Levie emphasized that the quality and structure of the arguments in a persuasive message were more critical for credible sources than for attractive sources. This principle was supported by a study conducted by Stone and Hoyt (1974) who found that attractiveness alone was not enough to change a recipient's attitude. Bednar and Levie also based principles 1 through 3 (see Appendix B) on a study conducted by Norman (1976), who found that it is important for an expert source to actually present an argument within the persuasive message to be effective. Norman found that an expert source who presented a message with an argument to a recipient was only slightly more effective than expert source who presented a message without an argument to a control group of recipients. However, when the expert presented an argument with a persuasive message, agreement from the recipient increased significantly more than with a the recipients from the control group. Additionally, the expert presenting an argument with a persuasive message yielded a higher level of agreement from the recipient than either an attractive expert without an argument or an attractive expert with an argument but without the persuasive message.

Principles 4 and 5 (see Appendix B) were supported by studies conducted by Cantor et al. (1976) and Shrigley (1976). Research indicates that a source who is similar with regard to first-hand experiences, gender, or vocation can be incredibly influential. Cantor et al., (1976) in their study about the persuasive effectiveness of peer communicators, found that an average woman with experience using the IUD contraceptive who was simply a peer and the same age as her target audience (also lay persons) was more influential in getting them to use the IUD

contraceptive than a non-peer medical expert (such as a nurse). Shrigley (1976) examined what third grade elementary science students considered to be important in terms of a science teacher's credibility. The students considered a teacher's actual classroom teaching experience to be more important than research or textbook authorship. The results of the study by Cantor et al. (1976) indicated the importance of informing the target audience of the communicator's background and experiences to establish congruence between both the source and receiver. Shrigley (1976) indicated that credibility, including what makes someone an expert, is also based on the perceptions of the target receivers.

For principle 6 (see Appendix B), Bednar and Levie (1993) explained that an argument must be relevant to the receiver's needs to be effective and referred to Kamradt and Kamradt's 1999 model (a manuscript in preparation at the time) to explain how needs work in relation to attitude change. According to Kamradt and Kamradt, attitudes are used as tools to serve or fulfill a particular psychological need, and emotions (feelings) can help identify the need in question. Bednar and Levie pointed out that once the need has been established, the persuasive message can be used to establish the importance of a particular need and how it can be truly satisfied. This idea of attitudes being tools to serve particular psychological needs, or *functions*, originally evolved in the 1950s and falls under the domain of functional theories of attitude change (Simonson & Maushak, 1996).

Bednar and Levie (1993) continued referring to communication theory as they explained principles 7 through 9 (see Appendix B). For principle 7, Bednar and Levie described how a two-sided argument is slightly more effective with regard to changing attitudes than a single-sided argument, but suggested that the receiver must understand and be familiar with the issue to provide an intelligent counter argument. For principle 8, Bednar and Levie pointed out that to be

effective, it is important to state the conclusion so that the receiver does not implicitly come to the wrong conclusion. For principle 9, Bednar and Levie suggested that repetition of a message is helpful, but only to a point. According to Bednar and Levie, “Laboratory experiments in persuasion and field studies of advertising in mass media demonstrate the positive effects of repetition” but pointed out that “for a given receiver little gain is likely after one or two repetitions” (p. 293).

Principle 10 is considered to be the *channel* principle. Much like Clark (1983), in reference to media and achievement, Bednar and Levie contended that media type is irrelevant and the message determines the effectiveness of the persuasion. However, Bednar and Levie pointed out that political campaign studies and diffusions of innovations research suggested that face-to-face communications are more effectively persuasive when it comes to changing attitudes about important issues. Bednar and Levie referred to McGuire’s (1985) study that tested different mediums with regard to attitude change. McGuire reported that there was no significant difference between mediums in terms of effectiveness of persuasion but did find that in some instances face-to-face communications were more effective.

Principle 11 (see Appendix B) is called the *receiver* principle. According to Bednar and Levie, studies dealing with most receiver characteristics have either been inconclusive or have been criticized for weak or inadequate research methodology. Even when the results of studies involving receiver characteristics have been credible, the levels of significance have been such that the contributions are minuscule and impractical for creating a guide for designing persuasive messages (Bednar & Levie, 1993). The one characteristic that has strong empirical support is that of *commitment* to an issue or argument. “Because of that, attitude research also considers the range of positions an individual is willing to accept (called the latitude of acceptance) and the

range of positions that the individual rejects (called the latitude of rejection)” (Bednar & Levie, 1993, p. 295). Many researchers have suggested that sequential approximations can increase the latitude of acceptance and ultimately increase the degree of attitude change possible (Bednar & Levie, 1993; Kamradt & Kamradt, 1999; Martin & Briggs, 1986).

Principles 12 through 16 (see Appendix B) deal with modeling and are based on research on modeling and vicarious reinforcement by Bandura (1977) that was later extended by Gagné and Briggs (1979). Principle 14 (see Appendix B) suggests that role playing can have a strong persuasive impact when designing instruction to change attitudes. Bednar and Levie (1993) referenced a study by Janis and Mann (1965) where participants observed role-playing in a scenario about smoking. Janis and Mann found that the participants who participated in the role-playing experiment decreased their smoking much more than those within the control group, resulting in a significant difference in terms of attitude change. Janis and Mann found that being actively involved in the scenario was important because the control group members were exposed to the same information but did not show the same degree of attitude change as the treatment group. The participants who were involved in the role-playing scenario also smoked fewer cigarettes than the control group even 18 months later.

Principles 17 through 22 (see Appendix B) focus on cognitive dissonance and are based on Festinger’s (1957) theory of cognitive dissonance as well as studies by Calder and Ross (1976). According to Bednar and Levie (1993), cognitive dissonance is a theory of rationalization. When conflict arises between the idea of “I smoke” and “smoking causes cancer,” a degree of psychological discomfort or tension occurs. Dissonance can also occur between a variety of attitudes and behaviors as well as perceptions of past and present

experiences (Bednar & Levie, 1993). This tension or cognitive dissonance can be resolved in several ways as is demonstrated in Figure 1:

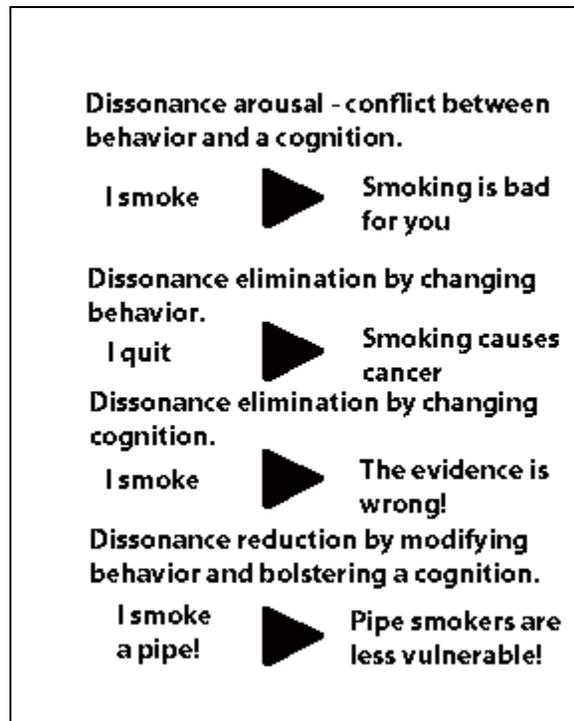


Figure 1. Bednar and Levie’s (1993) Model of Dissonance Arousal and Reduction.

Bednar and Levie (1993) referenced the idea of school busing to reduce racial prejudice during the 1960s as an example of applying the dissonance theory. “If individuals who feel prejudice toward another group are put in close interaction with that group and induced to behave civilly, dissonance theory would predict that their attitude toward the other racial group might change” (Bednar & Levie, 1993, p. 298).

For the final two principles (21 and 22; see Appendix B), Bednar and Levie referred to Kamradt and Kamradt (1999) and their structured design for attitude development model (a manuscript in preparation at the time) and its strategic effectiveness. Finally, Bednar and Levie discussed how the Kamradt and Kamradt model demonstrated principles 21 and 22 (see

Appendix B) in that it used successive approximations to address the affective (emotional or feeling), behavioral (acting), and cognitive (thinking) components of attitude change.

According to Simonson and Maushak (1996), “The Bednar and Levie principles are practical and effective, and provide considerable guidance to the designer of persuasive messages” (p. 1009). Simonson and Maushak used Bednar and Levie’s principles to validate their six guidelines for designing instructional mediated messages that persuade or change attitudes.

### **Guidelines for Attitude Change**

Instructional technologist Michael Simonson was instrumental in reviewing and conducting research that focused on instructional technology in relation to attitude change. During the 1980s, Simonson established six guidelines for designing instructional mediated messages that could persuade or change attitudes. The guidelines were based on theory and tested by Simonson and his colleagues via a variety of studies (Dimond & Simonson, 1988; Simonson et al., 1987; Simonson & Maushak, 1996). Guidelines 1 through 3 refer to message design and guidelines 4 through 6 refer to learner involvement. Simonson also validated his six guidelines using Bednar and Levie’s (1993) 22 principles for attitude change, as “Bednar and Levie’s principles can be subsumed within one or more of the following guidelines” (Simonson & Maushak, 1996, p. 1009). The six guidelines are as follows:

1. Learners are persuaded, and react favorably, when mediated situations include the discovery of useful new information about a topic.
2. Attitude change is likely because of, and learners react favorably to, mediated situations involving the use of instructional technologies that are authentic, relevant to them, and technically stimulating.

3. Learners are positively affected when persuasive messages are encountered in mediated situations that are as authentic and credible as possible.
4. Learners who are involved in a situation requiring their participation in the planning, production or delivery of media-based instruction are likely to react favorably to the situation and to the message delivered by the media.
5. Learners who experience purposeful emotional involvement or arousal during media-rich instructional situations are likely to change their attitudes in the direction advocated in the situation.
6. Learners who participate in situations where technology-based instructional situations are openly critiqued in an attitudinally appropriate way are likely to develop favorable attitudes toward the situations and toward the message. (p. 1009).

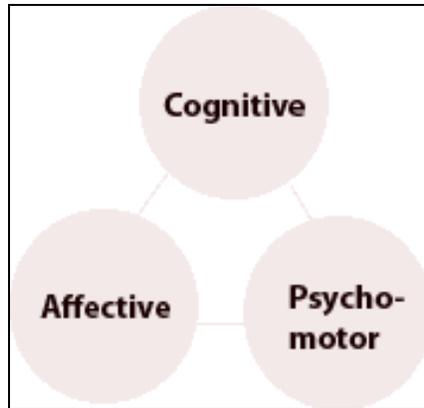
Simonson and Maushak (1996) called their six guidelines the *model of cumulative effect* and based them on 211 studies that examined the relationships between attitudes, attitude change, and instructional media. Simonson, an experienced instructional designer, concluded after numerous studies that media were only used to carry information and played a small role in the actual attitude change process. Simonson stated that “Actually, any careful study of the literature leads the serious, if conservative, reviewer to conclude that there is little if any ‘medium effect,’ and to agree with Clark (1983) that media are ‘mere vehicles’ that do not directly influence attitudes any more than they do achievement” (Simonson & Maushak, 1996, p. 984). In addition, Simonson stated that “Instructional media are primarily carriers of information and play their greatest role in the attitude change process as delivery vehicles” (Simonson & Maushak, 1996, p. 1000). Also, like Clark (1983), Simonson concluded that the actual message and the soundness of the pedagogical methodology used to construct it were more important than

the vehicle. According to Simonson and Maushak, “Media, at best, play a minor role in persuasion when compared to the message delivered by the medium or the methodology of instruction” (p. 1009). Furthermore, Simonson and Maushak pointed out that “Media do not influence attitudes; messages and methods do” (p. 988). Finally, Simonson and Maushak concluded that there is no best medium for attitude change as they explained “It is apparent from the literature of social psychology that a direct relationship between attitude formation and the production of educational behaviors such as achievement is not straightforward” (p. 994).

Furthermore, the primary focus of Simonson and Maushak’s work regarding attitude change has been concentrated on attitudes towards instruction, content, and the learning environment. Simonson and Maushak state “The most powerful rationale for the need to promote attitude positions in learners would be to demonstrate a direct relationship between attitudes and achievement, or liking and learning” (1996, p. 987).

### **Structured Design for Attitudinal Instruction**

Kamradt and Kamradt (1999) designed a model for attitude change called structured design for attitudinal instruction. The goal of this model was to help a learner change an attitude particularly when the learner is willing to consider changing the existing attitude. Kamradt and Kamradt proposed that attitudes are made up of three components: affective (feeling or emotional), behavioral (psychomotor or action), and cognitive (thinking). When an individual’s attitude is stable and he or she is comfortable with a specific topic, then the attitudinal components are equally balanced and the individual is confident in his or her attitudes about that specific topic (see Figure 5).



*Figure 2.* Kamradt and Kamradt (1999), Components and Structure of a Discrete Attitude.

From time to time attitudes fluctuate, individuals experience dissonance, or are uncomfortable with a given scenario or topic, leading a component of attitude to become unbalanced. Typically, individuals adapt to uncomfortable situations. For example, as depicted by Kamradt and Kamradt, perhaps an individual needs to drop off something for his or her grandmother during the individual's lunch break. When the individual stops by to drop off the item, his or her grandmother extends the invitation to stay for lunch. Immediately, the individual feels discomfort because he or she actually does not want to stay for lunch due to time constraints; the individual's gut instinct is to leave. This gut instinct to leave is a signal (i.e., affective component) that staying will threaten the need to leave (Kamradt & Kamradt, 1999). The individual may realize (i.e., cognitive component) that his or her grandmother is lonely and decide (i.e., cognitive component) to make an acceptable excuse while politely smiling and telling her (i.e., psychomotor component) that the individual must work over the lunch break to complete a project on time but will have lunch with her next time (Kamradt & Kamradt, 1999). Kamradt and Kamradt contended that an attitude "functions as a tool that allows its owner to respond quickly and effectively to environmental situations related to the satisfaction of

fundamental personal needs” (p. 570). Individuals must adjust and adapt the attitudinal components to meet core needs (see Figure 6).

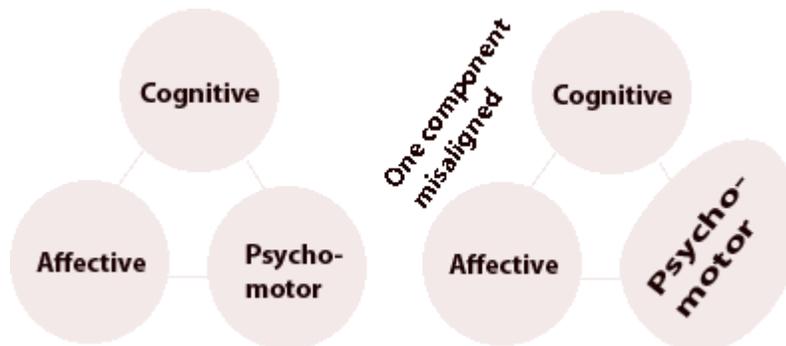


Figure 3. Kamradt and Kamradt (1999), Internal Consistency Versus Dissonance.

The main strategy behind the structured design model, according to Kamradt and Kamradt (1999), is to first distinguish the most dissonant component, quickly move it forward equally with the other two, and then “simultaneously move all three components of the attitude (affective, cognitive, and behavioral) the same amount in the same direction, using rapid shifts in instructional tactics, from one component to another” as well as “offer a safe environment in which to try on the new attitude” (p. 564). As an instructional intervention, this model allows for the flexibility of targeting one component more than the others in an attempt to balance all three of the attitude components into a consistent or “stable” attitude toward a particular subject. For example, if a subject is more emotional than cognitive and behavioral, the instruction may target the extreme emotional or affective component until it is balanced with the other two components (i.e., behavioral and cognitive). Kamradt and Kamradt pointed out that all attitudinal components do not typically exist in equal proportion and termed this principle *variable proportion* (see Figure 7).

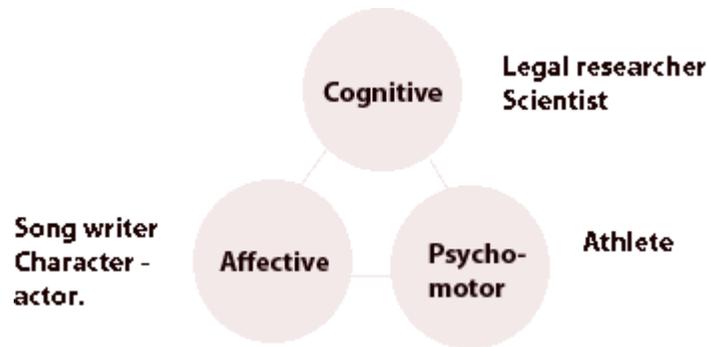


Figure 4. Kamradt and Kamradt (1999), Principle of Variable Proportion.

According to Kamradt and Kamradt (1999), the primary goal of the theory “is to help a learner change an attitude as it is intended for situations in which the learner is willing to reconsider an existing attitude” (p. 564). Ultimately, the objective is to move each component (i.e., affective, cognitive, and behavioral) simultaneously in the same direction as the desired attitude using rapid back and forth changes in instructional strategies to incrementally reach the target attitude (Kamradt & Kamradt, 1999). Kamradt and Kamradt also provided the following specific tactics for their attitude change model (p. 564):

1. Activate the attitude: Present a situation which calls for its use (behavior).
  - Can be direct or indirect activation.
  - The action should be slightly inconsistent with the learner’s existing attitude and in the direction of the target attitude (adjust if necessary). This creates dissonance.
2. Diagnose the dissonant component(s) by asking:
  - How did that situation make you feel? (affective)
  - What were you thinking? (cognitive)
  - Why did you do what you did? (behavioral)
3. Address whichever component is most dissonant.
  - If affective, use operant conditioning techniques.

- If cognitive, use persuasion.
  - If behavioral, use demonstrations and practice for the action.
4. Consolidate the attitude at one point on the continuum before proceeding.
- Include explicit transfer events and an organizational development plan.

Figure 5 provides a depiction of Kamradt and Kamradt's (1999) specific tactics within their Structure Design for Attitudinal Instruction Model:

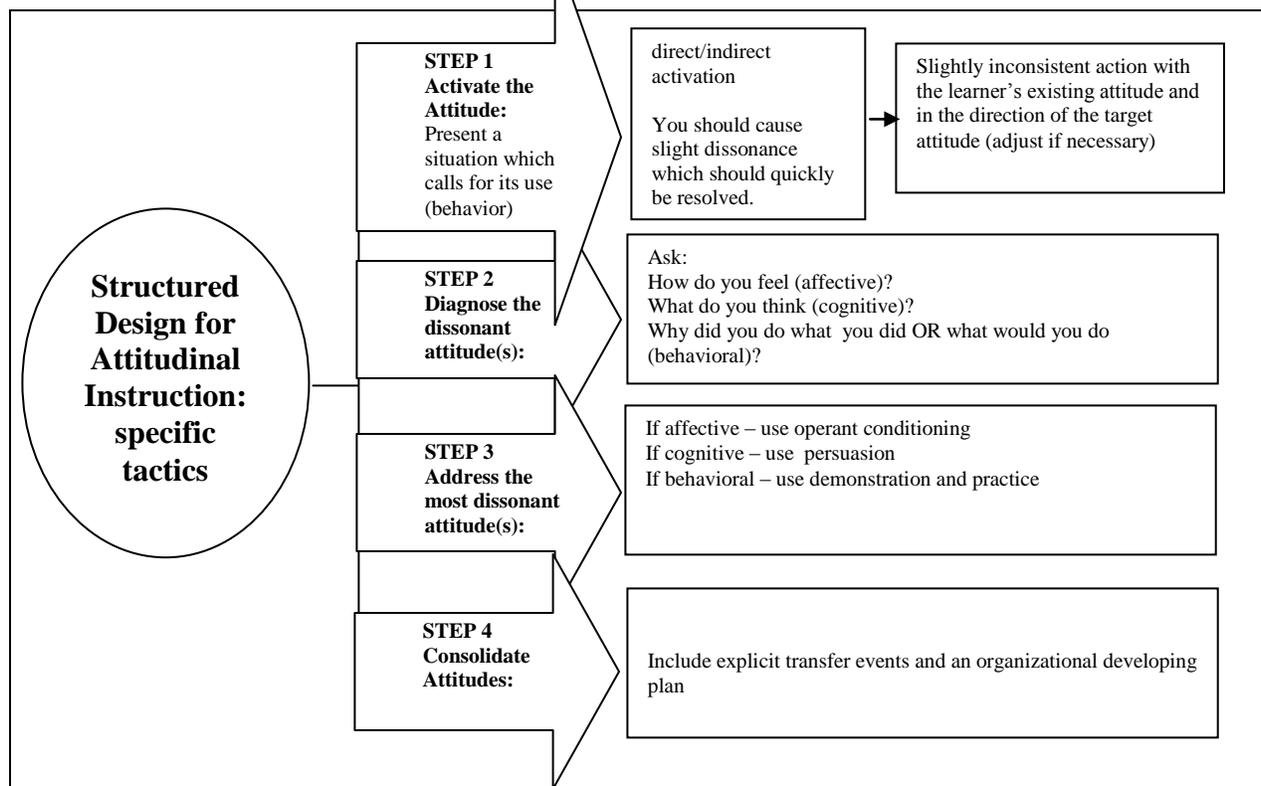


Figure 5. Kamradt and Kamradt (1999), Structured Design for Attitudinal Instruction.

In an attempt to provide information and insight on what strategies work to change attitudes, Kamradt and Kamradt (1999) clearly pointed out what does not work. Three strategies that Kamradt and Kamradt insisted are ineffective are the *revival preacher*, *debate champion*, and *dictator* strategies. The *revival preacher* strategy involves an attempt to invoke attitude change based on some emotional and inspirational persuasion, just like in a religious tent revival scenario. For example, if sales are dropping in a given retail company the manager or top

administrator may give inspirational speeches about how the company was started or provide workers with a sentimental history that plays on their emotions (affective component). This is always a short-lived change in attitude because the emotional or affective component is short-lived (Kamradt & Kamradt, 1999). The *debate champion* strategy would involve the manager developing a “superior argument” to change attitudes (Kamradt & Kamradt, 1999, p. 579). Once the workers are convinced that the superior argument is correct, they may try it for a day but usually end up slipping back to their old ways of doing things, rendering this strategy ineffective. Finally, the *dictator* strategy involves a leader or boss imposing his or her authority on employees to get them to perform as desired. This strategy results in unpleasantness due to its threatening nature and fear causes the employees to malfunction. The stress and dissonance from this strategy cause employees to think of ways to obtain their basic needs to feel at ease about their jobs (cognitive) resulting in a potential rebellion (Kamradt & Kamradt, 1999). This strategy will fail miserably.

These strategies are ineffective at moving all three attitudinal components equally in the same direction to reach a balance as depicted in Figure 6:

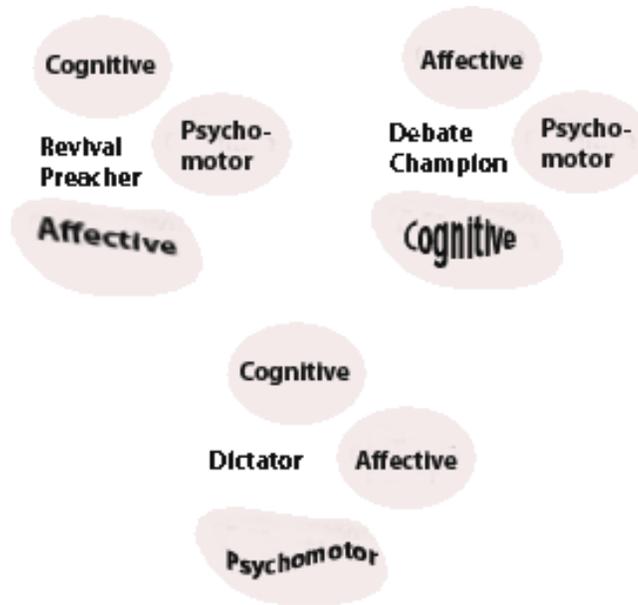
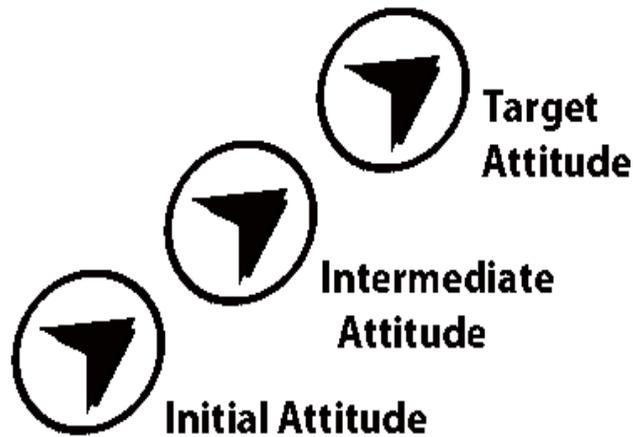


Figure 6. Kamradt and Kamradt (1999), Revival Preacher Tactic, Debate Champion Tactic, and Dictator Tactic.

As a more effective and practical alternative to these typical methods for changing attitudes, Kamradt and Kamradt (1999) offered a holistic approach that includes assessing the needs and initial attitude of the learner, addressing the most disproportioned component (affective, cognitive, or behavioral), and incrementally moving the learner toward the target attitude. To verify the most disproportioned component, the associated attitude must be activated by causing slight dissonance. Kamradt and Kamradt suggested that the “dissonance must be confined to the shortest possible period of time” (p. 581). Kamradt and Kamradt also stated that “Specifically, we must alternately nudge each component of an existing attitude a small amount in the direction of the matching component in the target attitude” (p. 580). This idea is depicted in Figure 10:



*Figure 7.* Kamradt and Kamradt (1999), Attitude Shifts.

Bednar and Levie (1993) referred to Kamradt and Kamradt’s (1999; a manuscript in preparation at the time) structured design for attitudinal instruction theory to support several of their 22 attitude change principles (see Figure 3). According to Bednar and Levie, “When the desired attitude is adopted, Kamradt and Kamradt add a significant new element to the lesson, a transfer event...which support their maintenance of the attitude” (p. 301).

According to Newbill (2005), “Structured design is a new technique, and has not been tested extensively, except as claimed by the authors in the original publication” (p. 41).

An in-depth review of the literature revealed that Newbill was the only instructional design researcher to empirically test Kamradt and Kamradt’s (1999) structured design model.

Newbill utilized the structured design model as an attitudinal change intervention for improving women’s attitudes toward science.

For the initial prompt to activate dissonant attitudes towards normality of scientists, the students in Newbill’s (2005) study were given a list of learning objectives. The objectives were: 1. List at least three different types of jobs that scientists have, and, 2. Describe a "typical" scientist.

Next, the students were asked to write their answers to the three questions asked (How

do you feel? What are you thinking? What will you do?). As part of a journaling process (for qualitative data) the participants filled in an electronic text box with their e-mail and one to two paragraphs about the following questions: 1) How does knowing that you are about to learn about scientists make you feel? 2) What do you already know about scientists? Can you already list three types of jobs scientists do? How would you describe a typical scientist? and 3) How do you think you will approach this module? What will you do? Will you go through it as fast as possible or will you do it slowly? Will you work on it by itself or will there be other distractions?

Newbill then diagnosed the most dissonant attitudinal components via the electronic journal entries. Meanwhile, Newbill proceeded to treat the affective (emotional) domain as she assumed and anticipated it to be the most dissonant attitudinal component. According to Newbill (2005), “the journal entry was designed to help validate assumptions made and to activate the existing attitude” (p. 80).

Next, the affective (emotional) domain was treated as the students clicked through ten profiles, mostly of women scientists. This module was called *scientists module* and was designed to improve participant’s attitudes toward the normality of scientists.

According to Newbill (2005) “the module included ten scientists who were chosen based on their appeal to the target population. They were young, normal, attractive people with interesting hobbies” (p. 81). The scientists consisted of four men and six women selected from a site called the Planet Science website. Each profile provided an image of the scientist and a series of information about their background. For example, each scientist’s profile provided a one paragraph answer to questions like: What is your job? Can you briefly describe your job path? Your family background? What do you love about your job? How do you switch off from work? Where can I learn more about your work?

Newbill named the next module the *minerals module* which was designed to improve participants (particularly women's) attitudes toward the social value of science. Again, this treatment focused on the affective (emotional) domain. The module also consisted of ten pages dedicated to minerals that benefit society.

Finally, Newbill created two control group modules both of which consisted of ten pages each. There were no journaling activities (writing about their feelings per the affective domain) with these modules and there were no instructional guidelines incorporated for improving women's attitudes toward science.

Newbill administered asynchronous web-based modules to 281 science students from two different universities. She found that the participants' (both male and female) attitudes improved towards scientist (normality of scientists) significantly more in the treatment group than the control group but no significant differences were found in attitudes toward science in general (by either males or females). Newbill also found that women's attitudes towards scientists showed significant improvement over men's attitudes in both the control and treatment groups.

Newbill cited some factors that may have limited the generalizability of the study. First, Newbill pointed out that nearly half of the students were enrolled in the same class with the same teacher who had already implemented many of the instructional strategies for improving women's attitudes towards science prior to the study. Second, Newbill stated that the list of learning objectives may not have adequately activate the appropriate dissonant attitudinal component. According to Newbill "the nature of the initial prompt used to activate learner's attitudes toward science prevented the collection of appropriate data to test the viability of Kamradt and Kamradt's approach to attitude change" (p. 122). Nevertheless, the prompt may

have activated the participants' attitudes toward the normality of scientists resulting in the improvement of attitudes for many of the participants.

Finally, Newbill's study was of great importance to the field of instructional design. Currently, there is a dearth of research in the field of instructional technology focusing on manipulating attitudes towards an idea. Newbill's study implemented existing instructional strategies to manipulate attitudes towards content as well as the idea and beliefs associated with the normality of scientists and women in science. Consequently, Newbill's study has been one of the most cited studies within the instructional design and technology literature regarding attitude change.

As efforts to conduct attitude studies within the field of instructional design and technology continue, existing strategies for attitude change within the field will also be strengthened and validated empirically.

### **Need For Further Research**

Existing studies within the field of instructional design and technology have contributed valuable information and insights regarding attitudes and attitudinal instruction to the field of education. Nevertheless, an in-depth review of the literature also suggests that scholarship associated with attitudes within the field has not reached its full potential. The result is a significant gap regarding the effectiveness of instructional strategies for attitude change within the current instructional design and technology literature base.

Currently, within the field of instructional technology, there exists a handful of models, guidelines, and principles dedicated to attitude change that have sound theoretical underpinnings. Nevertheless, few empirical studies have been conducted to test and validate these strategies as interventions within existing instructional situations. According to Simonson and Maushak

(1996), “Of the hundreds of studies published in the literature of educational communications since [1979] less than 5% examined attitude variables as a major area of interest” (p. 996). Also, based on the current literature on attitudes, the field of social psychology has provided the most empirical studies relating to attitude change. Simonson and Maushak (1996) support this fact by stating “Research on attitudes has been popular in many disciplines. However, the construct is considered to be more central to social psychology than any other academic area” (p. 985).

Much of the existing empirical research regarding attitudes, within the field of instructional design and technology has been focused on motivation and achievement as well as changing attitudes towards the instruction, content, subject, environment, or modality. For example, Anders and Berg (2005) conducted a study measuring university students’ attitudes toward learning chemistry and found that positive attitude changes were associated with motivated behavior. Furthermore, Simonson and Maushak’s studies, focusing primarily on mediated instruction, also examined and measured attitudes towards content and the learning situation. According to Simonson and Maushak (1996) “student attitudes toward a situation can tell the teacher a great deal about the impact of that situation on the learning process” and by “quantitatively and qualitatively assessing the opinions of students toward the learning activities in which they are participating, it may be possible to improve the quality of procedures” (p. 987).

In contrast, earlier instructional technology theorists such as Gagné, whose attitude change strategies were based on studies by Bandura (1977), viewed attitudes in a broader sense as learning outcomes regarding beliefs and values about objects, ideas, people, or events were the focus. Historically, very few empirical studies have been conducted within the field of instructional design and technology to examine attitudes as described by Robert Gagné.

Newbill's (2005) study focused both on content as well as values and beliefs regarding the idea of women in science.

Finally, prior to this study, there have also been no empirical studies within the field of instructional design and technology that have focused on implicit attitudes as all of the existing research and strategies have concentrated on explicit attitudes. Initiatives within the field of social psychologists have provided insights into the importance of implicit attitude research (Bertrand et al., 2005; Greenwald, 1965; Greenwald & Banaji, 1995; Stepanikova et al., 2011).

Kamradt and Kamradt (1999) pointed out that that attitude change is “an important trend in the conduct of both business and education: the widespread recognition that attitude is a critically important success factor” (p. 23). Additionally, Simonson and Maushak (1996) stated that attitudes “have been studied for decades by social scientists and educators and are beginning to be understood as organizers related to learning processes and outcomes” (p. 987).

The increase in training initiatives focusing on such sensitive topics such as diversity and tolerance in the workplace and public domain is at an all time high. These training efforts are geared towards educating, informing, and persuading those who must interact within diverse populations on a daily basis to exercise tolerance and acceptance (Dogra & Karnik, 2003; Fridell et al., 2001; Ross, 2008; Rudman et al., 2001; Villegas & Lucas, 2002). The majority of the existing training efforts and resources do not implement sound pedagogical methods for instruction. Furthermore, instructional strategies for attitude change that can be integrated into training processes, resources, and materials are not only useful but crucial for such initiatives.

## **Racial Profiling: An Area In Need of Attitude Change**

Existing training initiatives within the workplace and educational settings currently deal with diversity, equality, conflict management, anger management, and race relations. One of the most controversial and increasingly growing problem areas in a variety of environments is racial profiling. Currently, organizations, educational institutions, and government agencies are attempting to eradicate racial profiling via instruction and training efforts. Existing instructional design and technology strategies dealing with attitude change would not only be helpful but are crucial to this initiative.

A Gallup Poll “involving 2,006 telephone interviews with randomly selected U.S. adults and conducted during the period from late-September to mid-November, 1999—found that 56 percent of whites and 77 percent of African Americans believe that racial profiling is a widespread practice in the United States” (Cleary, 2000, p. 8). Also, surveys have indicated that “81% of U.S. colleges and universities” have incorporated diversity workshops to deter racial stereotyping and anti-minority attitudes (Rudman et al., 2001, p. 857). These survey results prompted the U.S. Department of Justice to mandate training initiatives in 2001 to eradicate and reduce incidents of racial profiling. There is evidence that the problem is getting worse. According to a report from the U.S. Department of Justice, in response to an investigation of a southeastern city, “Out of 38,595 stops in 2010, 40.1 percent were white drivers and 56.9 percent were black. But whites accounted for only 22.4 percent of those searched, while blacks accounted for 75.6 percent” (Halpin, 2012, p. 1). Not only are incidents increasing but are also expanding out to affect a larger pool of minority groups, particularly after September 11, 2001 (Chaffin, 2005).

The term *racial profiling* is used a great deal in the area of law enforcement, as Cleary (2000), a legislative analyst and researcher, defined racial profiling as occurring “when a law enforcement officer uses race or ethnicity as one of several factors in deciding to stop, question, arrest, and/or search someone” (p. 6). Officials at the ACLU also consider the field of law enforcement to be an important integrated part of their definition of the term. The ACLU website defines racial profiling as “the discriminatory practice by law enforcement officials of targeting individuals for suspicion of crime based on the individual’s race, ethnicity, religion or national origin” (ACLU, 2005, p. 1). ACLU officials contend that enforcement personnel who target suspects solely on the basis of race, ethnicity, gender, religion, or national origin are engaging in racial profiling (ACLU, 2005). Amnesty International (2004) defined racial profiling as “the targeting of individuals and groups by law enforcement officials, even partially, on the basis of race, ethnicity, national origin, or religion, except where there is trustworthy information, relevant to the locality and timeframe, that links persons belonging to one of the aforementioned groups to an identified criminal incident or scheme” (p. v). Again, law enforcement is part of the definition provided by Amnesty International. Sometimes racial profiling can stem from an unconscious or mild form of racism.

For the purpose of this study, all three of the aforementioned definitions were applicable with special attention being given to the idea of unfairly targeting an individual or group of individuals based on race, ethnicity, gender, nationality, religion, or other conditions. In addition, the common definition, which includes law enforcement or similar enforcement personnel, applied to this particular study because participants were law enforcement personnel.

## Measuring Attitude Change

Simonson and Maushak (1996) indicated that “When reviewing the literature that deals with attitude change and instructional technology, it is very apparent that attitude measurement is often done very poorly” (p. 994). Some of the considerations associated with measuring attitudes, regardless of discipline, include clearly defining variables, using the appropriate measures, and making sure that the measure is validated. Furthermore, Schwarz and Bohner (2001) stated that “Empirically, attitude measurement is highly context dependent and minor changes in question wording, format, or order can have a profound impact on the obtained reports” (p. 4).

Simonson and Maushak (1996) noted some accepted approaches for measuring attitudes that were common during their review of research in the field. The first approach noted was self-reporting, which consists of a participant directly reporting information about their own attitudes. Self-reporting has traditionally occurred both orally and in written form by way of interviews, telephone polls, surveys, questionnaires, journaling, and rating scales. A second method noted by Simonson and Maushak included obtaining reports from others due to the inaccessibility of the target interviewees. For example, direct observations may need to be made by those who have direct contact to a source that is off limits to the researcher such as a restricted military zone. Another approach noted was a sociometric procedure where participants report their attitudes to each other as peers. Finally, Simonson and Maushak described measuring attitudes by way of records. For example, an attempt may be made to measure attitudes from an extinct civilization where the only remnants are historical documents or written accounts.

The most common approach for measuring attitude change found in the literature has been self-reporting questionnaires using the Likert rating scale (McLeod, 2008; Nighswonger, &

Martin, 1981). This approach has also traditionally been used for measuring attitudes regarding race and discrimination (Dugosh, & Alaniz, 1997; Henry & Sears, 2002; Sears & Henry, 2005).

An example of a well cited self-reporting instrument for measuring attitudes is the Symbolic Racism Test 2000 or SR2K. The SR2K is an eight question self-reporting instrument where items are measured on a 4-point Likert scale (Sears & Henry, 2005, p. 1). The creators of the Symbolic Racism Test 2000, Henry & Sears (2002), state that symbolic racism is “conceptualized as a unidimensional construct representing prejudice toward blacks” (p. 256). The SR2K is considered to be internally reliable as it has a Cronbach’s alpha of .78. According to Biernat and Crandall (1999), “the heart of modern-day racial attitudes can be successfully measured through self-report” (p. 298). Henry and Sears (2002) agreed with this notion but did point out there is concern with regard to self-reporting instruments that measure racism, as racism is not socially acceptable Henerson, Morris, and Fitz-Gibbon (1987) contended that attitudes need to be tested using a “variety of measures” (p. 14).

Other social psychologists have suggested that self-reporting instruments alone do not provide an accurate measure of attitude change, particularly when measuring implicit attitude change. Schwarz & Bohner (2001) state “In response to the malleability of attitude reports, social psychologists have repeatedly tried to replace or supplement verbal self-report measures with other, presumably more direct, ways to assess individuals’ evaluative responses to attitude objects” (p. 3). Social desirability bias or the tendency to give only socially acceptable answers on questionnaires is another concern for many researchers regarding self-reporting attitude measures. According to McLeod (2009) “People are often motivated to give replies that make them appear well adjusted, unprejudiced, open minded and democratic. Self-report scales that measure attitudes towards race, religion, sex etc. are heavily affected by socially desirability

bias” (p. 1). As a result of this emerging perspective, digital rapid response attitude measures have been designed and have greatly extended the field of attitude change research.

One of the most cited examples of a rapid response measure designed to measure attitudes is the Implicit Association Test (IAT). The IAT was introduced as an assessment of attitudes that was designed to be taken on a computer (Greenwald et al., 1998). The test requires a participant to make rapid judgments based on stimuli that appear in the form of words, images (faces of African-American or Caucasian individuals), and ultimately a combination of both. Attitude researchers consider the IAT results to be an accurate indicator for unconscious or hidden attitudes that an individual may not normally want to be publicly revealed. To date, the IAT has been taken by millions of participants and has been validated via meta-analysis of 50 studies (Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005). The meta-analysis suggested good internal consistency with a Cronbach’s alpha of .79.

Furthermore, an in-depth review of the instructional technology literature also reveals that studies in the field have been limited to measuring explicit attitudes using self-reporting instruments. Prior to this study, no studies in the field have measured implicit attitudes or have used rapid association methods, such as the IAT, that are used by social psychologists.

The focus of the proposed study was to examine both implicit and explicit attitudes using two different measurements with one being a well-validated self-report instrument and the other a well-validated rapid association based instrument.

## Summary of Literature Review

The study of attitudes has been in existence for more than 80 years and research initiatives regarding attitudes have been the focal point of many fields but more so with social psychology than any other academic area (Hughes et al., 2011; Simonson & Maushak, 1996).

Experts from both educational technology and social psychology agree that attitudes are functions of experience that are comprised of three domains: cognitive (thinking), affective (feeling), and psychomotor (behavioral; Bertrand et al., 2005). Furthermore, many in the field of social psychology believe that attitudes are both implicit and explicit in nature (Bertrand et al., 2005; Ewing, Allen, & Kardes, 2008; Greenwald & Banaji, 1995). Explicit attitudes have been described by Payne et al., (2008), as attitudes that are “expressed intentionally; implicit attitudes are those expressed despite intentions” (p. 29). Implicit attitudes have been defined as “introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feeling, thought, or action toward social objects” (Greenwald & Banaji, 1995, p. 8).

Simonson and Maushak (1996) did an extensive review of attitude research in the field of instructional technology and outlined several concerns. First, the problem of not clearly defining research variables was heightened by the fact that few researchers listed a hypothesis or research questions within their research designs. Second, Simonson and Maushak found that attitudes were not well measured in most of the existing studies. In addition, only a few of the studies listed the methods employed to measure attitudes and attitude change. Simonson and Maushak found that “only 50% of the studies reviewed reported on the validation of attitude measures, and only 20% reported descriptive information about their attitude tests” (p. 995). Finally, sound research design was not taken into consideration as many of the quantitative studies were

conducted without a control group. Simonson and Maushak called for more sound quantitative studies and contended that “The move to more qualitative-based research and measurement has not changed this situation, and may be contributing to a decline in the quality of attitude testing” (p. 994). They also argued that quantitative attitude measurements must be valid, reliable, simple to administer, and replicable or testable when used on different groups and in different situations.

According to social psychology experts, implicit attitudes affect how individuals make everyday decisions that guide actions and are typically unobservable but are measurable (Stepanikova et al., 2011). Current research conducted in the field of social psychology has also provided strong empirical evidence that implicit attitudes can be manipulated (Bertrand et al., 2005).

Despite the abundance of attitude change research conducted in other disciplines, to date, there has been a limited (i.e., less than 5%) of empirical studies that have focused on attitudes and attitude change within the field of instructional design and technology (Simonson & Maushak, 1996). The existing attitude studies within the field of instructional design and technology have only focused on explicit attitudes as, prior to this study there have been no studies that have examined implicit attitudes.

Additionally, Simonson and Maushak (1996) outlined several concerns regarding the quality of many of the studies regarding attitudes within the field of instructional design and technology. Of particular concern was the methodology and measurement implemented with the majority of the studies found in the literature. Simonson and Maushak indicated that many studies were lacking in a variety of areas including validation, defining of variables, statistical methods, measurement, and reporting. Finally, the researchers suggested that up to the time of their review of existing literature, there had been few true attitude studies within the field,

particularly experimental studies utilizing a control group. Simonson and Maushak suggested that more sound quantitative studies that are replicable are preferable for attitude research in the field, and that qualitative-based research “may be contributing to a decline in the quality of attitude testing” (p. 994). Furthermore, many of the existing instructional strategies have been derived from former social psychology research studies but have not been empirically tested.

The four steps for modeling attitude change proposed by Gagné et al. (1988) have empirical foundations in research conducted by Bandura (1977) with his Bobo doll experiments (Bandura et al., 1961). Later studies by Friedrich and Stein (1972) continued to support the findings from earlier studies conducted by Bandura during the 1960s. Even more current studies continue to support the idea of attitude change based on modeled behavior (Dasgupta & Greenwald, 2001; Greenwald & Banaji, 1995; Fox & Bailenson, 2009). Although the four steps for modeling attitude change have been derived from several empirical studies, as indicated by the literature, the steps have not been empirically tested as an intervention.

Bednar and Levie’s (1993) guidelines for attitude change are well-grounded in empirical studies from (a) communication theory, or source, message, channel, and receiver (Cantor et al., 1976; McGuire, 1985; Norman, 1976; Shrigley, 1976; Singletary, 1976; Stone & Hoyt, 1974); (b) modeling (Bandura, 1977; Gagné et al., 1988; Janis & Mann, 1965); and (c) cognitive dissonance theory (Festinger, 1957). Simonson and Maushak (1996) also used Bednar and Levie’s guidelines for attitude change to validate their six guidelines for attitude change (called the model of cumulative effect). Despite the fact that Bednar and Levie’s (1993) guidelines for attitude change are derived from previous studies, again, there is no indication within the literature that these guidelines have been empirically tested as an instructional intervention.

Finally, Kamradt and Kamradt's (1999) structured design for attitudinal instruction model, as indicated by a review of the literature, has only been empirically tested in one prior study conducted by Newbill (2005) who also emphasized its lack of empirical support prior to her study. Bednar and Levie (1993) as well as Simonson and Maushak (1996) fully supported, referred to, and recommended Kamradt and Kamradt's structured design for attitudinal instruction model despite limited empirical testing.

This study attempted to strengthen and provide additional empirical support to the existing strategies provided by Bednar and Levie (1993) concerning Kamradt and Kamradt's (1999) structured design for attitudinal instruction model as well as extend Newbill's (2005) efforts to empirically test the model. The study also attempted to expand the existing work of Gagné et al. (1988) and Bednar and Levie (1993) by also further empirically testing their prescribed steps and principles regarding attitude change via instruction.

In addition, the study adhered to the recommendations outlined by Simonson and Maushak (1996) for sound, replicable, quantitative attitude research within the field of instructional design and technology.

Finally, the study was the first in the field of instructional design and technology to examine and manipulate implicit attitudes. Existing strategies for manipulating implicit attitudes, as prescribed by experts in the field of social psychology, were implemented and integrated with existing strategies for attitude change from instructional design and technology. As a result, the study attempted to build upon the existing body of literature regarding attitude change in the field of instructional technology.

## **CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY**

### **Problem and Purpose**

The purpose of this experimental study was to investigate the effectiveness of instructional design strategies intended to influence implicit attitudes, as measured by the IAT, and explicit attitudes, as measured by the SR2K.

Gagné et al. (1988) and Bednar and Levie (1993) outlined specific criteria for changing attitudes within an instructional setting. Additionally, researchers within the field of social psychology have provided strategies for manipulating implicit attitudes (Bertrand et al., 2005; Dasgupta & Greenwald, 2001; Rudman et al., 2001). These criteria and strategies were embedded and integrated within Kamradt and Kamradt's (1999) structured design model for attitudinal instruction. A quantitative analysis was conducted to test the effectiveness of the treatments intended to manipulate the participants' existing implicit and explicit attitudes.

### **Research Questions**

The following research questions guided the data collection and analysis.

1. Will the incorporation of attitudinal strategies within web-based instruction influence the participants' implicit attitudes, as measured by the Race Implicit Association Test (Race IAT)?
2. Will the incorporation of attitudinal strategies within web-based instruction influence the participants' explicit attitudes, as measured by the Symbolic Racism Test 2000 (SR2K)?

## Research Design

The two research questions for this study were quantitative in nature, and a post-test-only control group design was used for collecting all relevant data as denoted below using standard notation (Creswell, 2009):

Experiment Group: R X O<sub>1</sub>

Control Group: R X<sub>alt</sub> O<sub>2</sub>

According to Creswell (2009), this is considered to be a traditional classical research design that involves the random assignment of participants to one of two groups. One group received the treatment while the other functioned as the control group. The independent variable was the treatment, or the instructional design strategies employed to influence both implicit and explicit attitudes that affect racial profiling. The dependent variables were the implicit attitudes as measured by the Race IAT, and the explicit attitudes as measured by the SR2K.

Participants were assigned to either the control or the treatment version as they randomly signed up for the 120-minute training sessions. Participant 1 was assigned to the treatment group (group 1) and participant 2 was assigned to the control group (group 2) and so forth. This ensured that there was no systematic bias in assigning participants (Creswell, 2009).

Both groups received the post-test (O for observation) but only the treatment group received the treatment (X). The control group received an alternate treatment (X<sub>alt</sub>) to control for time on task. The total time for the training session, including the intervention, was 120 minutes. The first 90 minutes of the instruction for both groups included the same interactive digital presentation from the Department of Criminal Justice. The treatments and alternate treatments consisted of 30 minutes of additional instruction. (See Table 1.).

*Table 1. Research Procedure*

Group	Instruction	Intervention	Post-Test
Treatment	90-min instruction	30-min intervention	15-min Race
	From Department of Justice	includes the strategies for attitude change	IAT, SR2K
Control	90-min instruction	30-min additional	15-min Race
	From Department of Justice	instruction from the Department of Justice materials	IAT, SR2K

Comparison of scores between groups on the Race IAT for implicit attitudes provided insight into the first research question. Comparison of scores between the post-test SR2K for explicit attitudes provided insight into the second research question.

### **Research Participants**

The participants in this study consisted of male and female law enforcement officers who were enrolled in a regional police academy in rural southwest Virginia and who volunteered to participate. Fifty law enforcement officers volunteered. Volunteers came from the 39 law enforcement agencies throughout southwest Virginia, who are required to take the training each year. All of the volunteers were 18 years old or older. Volunteers were randomly assigned to either the treatment group or the control group.

The 50 participants consisted of 47 males and 3 females. Other than one African American male and one Native American male, the remaining participants were Caucasians. There were 9 Caucasian males within the age range of 45-54, 11 Caucasian males in the 35-44 age range, 9 Caucasian males in the 25-34 age range, 16 Caucasian males in the 18-24 age range,

1 Caucasian female in the 35-44 age range, 2 Caucasian females in the 45-54 age range, 1 American Indian male in the 34-45 age range, and 1 African American male in the 55-64 age range. Of the participants, 6 had master's degrees, 10 had bachelor's degrees, 3 had associate's degrees, 19 had some college, 11 were high school graduates, and 1 had a junior school high education.

### **Data Collection Materials**

Data were collected via demographics questionnaires: the implicit attitude assessment (Race IAT) and the explicit attitude assessment (SR2K). The post-test, given after the instruction, consisted of the demographic questions, the SR2K, and the IAT.

#### **Demographics Questionnaire**

A short demographic survey was integrated at the beginning of the post-test that asked the participants' gender (male or female), race (American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White), age range (18-24, 25-34, 35-44, 45-54, 55-64), and education level (junior high school, high school graduate, some college, associate's degree, bachelor's degree, master's degree).

#### **Symbolic Racism Test 2000 (SR2K)**

The SR2K is an eight-question, self-reporting instrument where items are measured on a 4-point Likert scale. Participants were asked to rate their views on items such as "Over the past few years, blacks have gotten less than they deserve" or "Over the past few years, blacks have gotten more than they deserve," with scores ranging from 1 to 4 (1- strongly agree, 2- agree, 3- disagree, 4- strongly disagree) (Sears & Henry, 2005, p. 1).

Henry and Sears (2002) also contended that "the scale as a whole represents all the major themes of symbolic racism and is internally reliable. It has construct, predictive, and discriminant

validity” (p. 258). According to Henry and Sears, the average Cronbach’s alpha for the SR2K is 0.78.

### **Race Implicit Association Test (Race IAT)**

The Implicit Association Test (IAT) was initially designed to examine the unconscious thoughts and emotions associated with various topics. According to Greenwald et al. (1998), “The IAT procedure seeks to measure implicit attitudes by measuring their underlying automatic evaluation” (p. 1464). The Race IAT was used to measure differences in implicit attitudes for this study. Ultimately, the Race IAT measures one’s implicit preference toward Caucasians or African-Americans and requires that the participant make rapid judgments in response to corresponding stimuli. The IAT process involves a series of seven tasks. For each series of tasks, the participant is given two categories. For example, the words African-American appear on one side of the screen and the words European-American on the other. In the middle of the screen there will be a face of a person with either a darker or lighter complexion. Later participants only associate words such as “joy” or “unpleasant” with the words “good” or “bad.” As the tasks become more complex, the faces or descriptive words randomly appear in the middle of the screen while the terms European-American and African-American appear with the words “good” or “bad” at both sides of the screen. Participants must rapidly select the keyboard letter associated with their choice. Because many people can misrepresent their true feelings, the IAT is considered to be less “fakable” (Bertrand et al., 2005, p. 95). Hofmann et al. (2005) conducted a meta-analysis of 50 studies that used the IAT and reported the average internal reliability, or Cronbach’s alpha, to be 0.79.

## Instructional Materials

The instructional materials for this study consisted of two fully asynchronous web-based modules on the topic of preventing biased-based policing. The first 90 minutes of each module were based solely on materials provided by the U.S. Department of Justice and were identical for both groups. However, the last 30 minutes of the instruction for the treatment group (outlined in Appendix C: Instructional Intervention Process) incorporated techniques for attitude manipulation found in the literature (see Figure 8). The second module was designed for the control group and did not incorporate any of the recommendations.

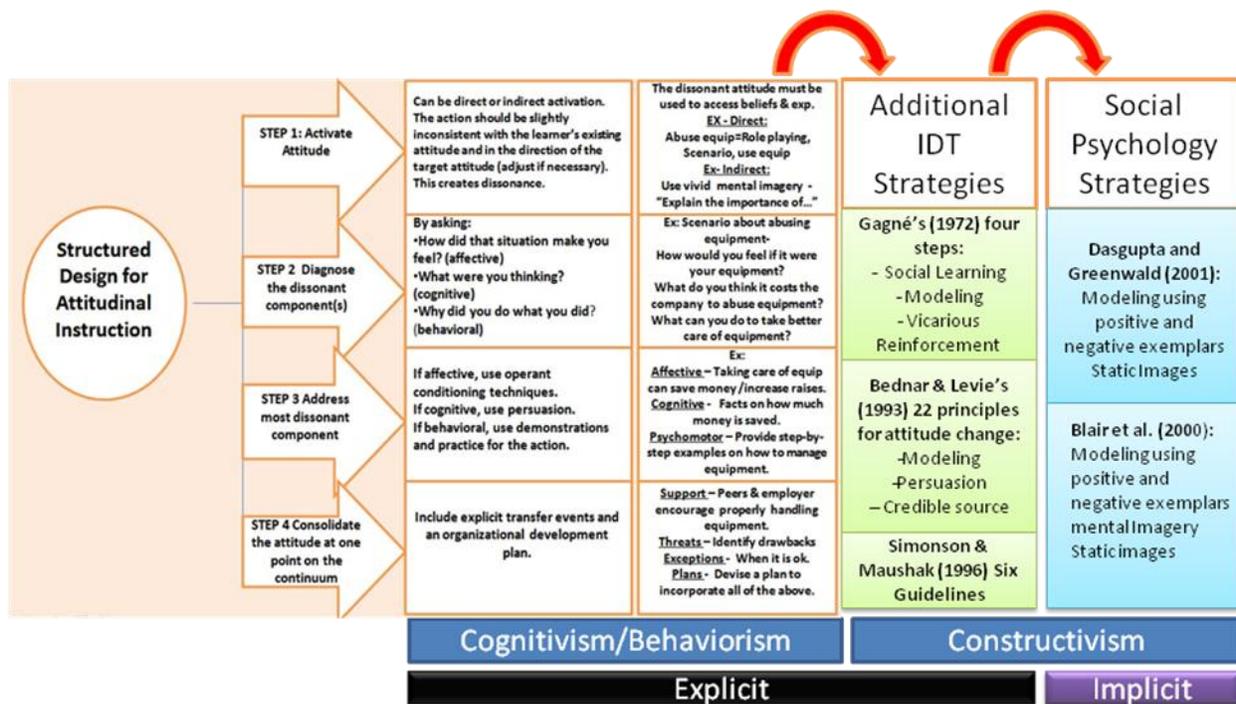


Figure 8. Integrated Strategies for Attitude Change.

### Control Group Materials

The last 30 minutes of instruction for the control group consisted of a continuation of the instructional information and materials for the prevention of bias-based policing provided by the U.S. Department of Justice.

## Treatment Materials

The intervention was designed based on the recommendations for attitude change found in the literature and was used for the treatment group of study participants. The strategies were embedded into the TRAX learning management system as HTML as well as .PDF documents with links to videos and images (refer to Appendix C: Instructional Intervention Process).

Articulate Studio, an interactive multimedia program for displaying animation, sound, and video, was used to play and display videos. Each section of the instructional material was structured sequentially to adequately go through each step of the Kamradt and Kamradt (1999) model (see Figure 9 and Appendix C: Instructional Intervention Process).

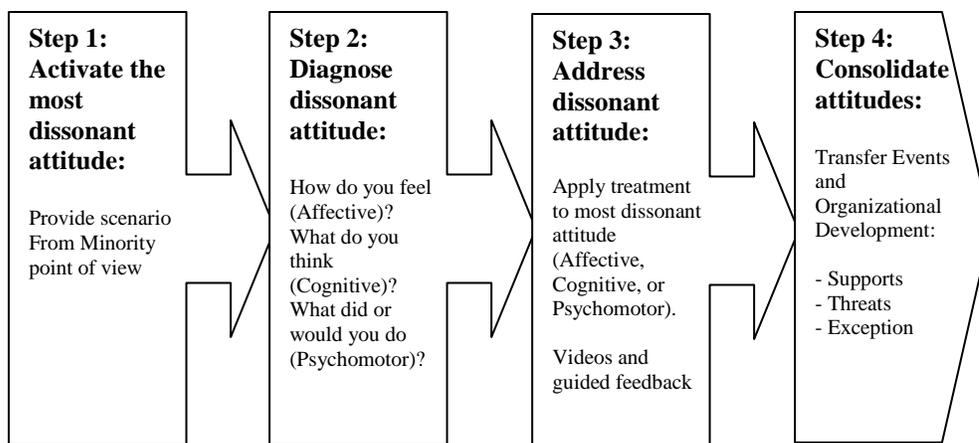


Figure 9. Applied model

The beginning of the courseware learning environment displayed a text-based scenario as an HTML document. This first step was designed to activate the most-dissonant attitudinal component (i.e., affective, cognitive, or psychomotor) in an attempt to target the component. Learners were given a scenario that included role-playing as participants on the opposite side of a two-sided argument, as many police officers feel that they are constantly being falsely accused of being biased (Fridell et al., 2001). Based on the recommendations of expert reviewer Dr.

Phyllis Newbill, the scenario consisted of a situation where each participant played the role of an off-duty police officer driving through a law enforcement road checkpoint. Via vicarious reinforcement, as an off-duty police officer, the participant witnessed what appeared to be blatant racial bias from non-minority law enforcement personnel. The aim of the scenario was to cause slight dissonance on the part of the participants in an attempt to expose their most dominant attitudinal components regarding the topic. Five minutes were allotted for the activation of the initial attitude.

Next, a screen appeared asking the participants, in essence, how they felt (affective) about the situation, what they thought (cognitive), and what action they would have taken within the given scenario (psychomotor). The participants were allotted approximately 3 minutes to rank and select the components in order of importance (most dissonant). Based on which attitudinal component was selected and in what order, the participant selected the appropriate button link option consisting of buttons labeled “how I feel,” “what I think,” “what I would do” (Figure 10).

Of the three questions you were given which do you find to be the most important order from 1-3 (how you feel, what you think, or what you do)?

Once you decide the order of importance in regard to the scenario select the following link button options in the order you've chosen.

<a href="#">How I feel</a>	<a href="#">What I think</a>	<a href="#">What I would do</a>
----------------------------	------------------------------	---------------------------------

Once you have finished going through each of the above options in the order of importance that you have selected please read the section below:

*Figure 10.* Selection of Attitudinal Components.

Also, contingent on which attitudinal component was selected, the participant was redirected to the page that was associated with the option selected. If the affective component was selected as the most dissonant, then in accordance with Kamradt and Kamradt’s (1999)

model, the participant received operant conditioning learning (see Figures 8, 9 and Appendix C). If the most-dissonant component was cognitive, the participant was directed to a page that had a cognitive learning module (see Figures 8 and 9). Finally, if the initial most-dissonant component was psychomotor, the participant was directed to a unit of instruction that provided motor skills learning (see Figures 8 and 9). As the participants clicked on each link that described their most-dissonant attitude, Articulate Studio content would open up and show the associated attitudinal strategies materials. The images consisted of credible exemplars from the news media and were supplemented by videos of the same exemplars discussing the given topic in a format that met the criteria outlined in the given strategies. Videos consisted of Associated Press-approved news footage that was publically available via YouTube.com.

Each unit was 5 minutes in duration. Each participant started with the most-dissonant component and then addressed the other two attitudinal components in the order they deemed important.

In the next phase of the interventional instructional module, the attitudinal components were consolidated. The last phase of the module wrapped up the instructional intervention. This section reiterated what was covered during the entire module and provided an opportunity for the participants to recall information learned throughout the intervention. As participants entered this portion of the training, at the heading of the page was a question asking *what have we learned and how can what we have learned be applied within the workplace?* Under this page heading participants were asked a series of questions that related to transfer and organizational development pertaining to support, threats, exceptions, and plans. This final unit prepared the participants to transfer the newly learned skills and information out into the real world and into the workplace. Support resources for the newly learned attitude were provided as well as

information on when the new attitude may or may not be applicable. Figure 9 provides a detailed operational flow of events with regard to Kamradt and Kamradt's (1999) structured design for attitudinal instruction model, as well as the associated steps, principles, and guidelines.

### **Expert Review**

Recommendations were also provided via expert review by Dr. Phyllis Newbill and Dr. Rob Goralewicz regarding the initial treatment (attitudinal instruction) portion of the training (refer to Appendix E: Expert Review). Both experts were presented with the storyboard and the actual treatments as presented to the participants.

Dr. Newbill, an instructional designer, stated that the initial instruction had potential to be effective; in addition, Dr. Newbill provided some useful and constructive recommendations. Her first recommendation was to re-examine the scenario used to activate the most dissonant attitudinal component. Dr. Newbill suggested rethinking the scenario from a law enforcement point of view. Based on Dr. Newbill's recommendation, the scenario was changed to accommodate this point of view. For example, via the recommended changes in the scenario, the participant was able to view the scenario as a law enforcement officer, which made it more applicable and more effective as a strategy to activate the most dissonant attitudinal component. Dr. Newbill also made recommendations concerning the readability, clarity, and punctuation within a few sections of the treatment. Based on her review and recommendation, these edits and changes were applied.

Dr. Rob Goralewicz, an educational psychology professor, also made recommendations regarding the treatment portion of the training. Dr. Goralewicz considered the training to be effective. Dr. Goralewicz also noted that the instruction appeared to include design elements

from Kamradt and Kamradt's (1999) model. Dr. Goralewicz provided some insight into the processes of the Kamradt and Kamradt model and suggested that the relevant images be placed with the corresponding videos for each applicable section.

These recommendations from both Dr. Newbill and Dr. Goralewicz were taken into consideration and implemented accordingly within the step-by-step procedures of the instructional model.

### **Procedures**

A 120-minute training session on the topic of preventing biased-based policing was offered on the police academy learning management system (TRAX). Students enrolled in the course were able to take the training from any remote location with Internet connectivity. Each 120-minute training session (control or treatment) was made available for a 14-day period and accessible 24 hours a day during the designated period of time. First, the participant logged on to the TRAX learning management system and selected the *prevention of biased-based police training* option from the menu. Once the participant selected that option, the first page to appear displayed an informed consent form which provided an opportunity to continue with or opt out of the study (see Appendix D). If participants opted not to participate in the study, they were directed to another page that took them to an alternative training module. Participants who chose to continue with and participate in the study were randomly directed to either the control group training session or the treatment training session. The step-by-step procedures for volunteers who selected the treatment training were outlined in Figures 8 and 10, and in Appendix C. Both the treatment group and the control group completed the post-tests (demographic questionnaire, SR2K and Race IAT).

Once permission was granted via the informed consent page, the learner was directed to a new page that displayed instructions on how to proceed. On the instruction page a column appeared on the left with the topics, while the content for each topic auto-played in the right or main window. As the instruction played, text appeared with the associated animations when applicable. The training was also voice narrated in English. The topics covered were based on materials provided by the U.S. Department of Justice. The total time allotted for the instruction was 120 minutes.

Once the instruction was completed, the participants were allocated 15 minutes to complete the post-test. First, the participants were prompted to complete the Race Implicit Association Test (Race IAT) assessment. As the link to the Race IAT was selected, a window appeared instructing the participant to close all other browser windows (other than the browser window containing the instructions), to allow JavaScript to be enabled via the browser when prompted, and to prepare for the upcoming questions to appear in a pop-up window once the test started via the Continue button. When participants clicked the Continue button, a new window opened with instructions and examples on how to respond to the stimuli presented on the screen using the computer keyboard. For example, selecting the space bar started the questionnaire; selecting the “e” key allowed the user to choose items on the left side of the screen; and selecting the “i” key allowed the user to choose items on the right side of the screen.

When the participant selected the Continue button, the first pop-up window appeared. This window presented four multiple-choice demographics questions asking the participants’ gender, race, age, and level of education. Once the demographics questions were completed, the next pop-up window started the Race Implicit Association Test (Race IAT). At the end of the test, a score (the D score) appeared on the screen, and the participant was prompted to close the

window. The data from the completed test was automatically submitted electronically to a secure database on the Millisecond company hosting test server in a format that could be opened and analyzed using statistics software (such as SPSS). All data were accessible to the researcher via a username and password prompt.

Next, the participant was prompted to take the Symbolic Racism Test 2000 (SR2K) survey assessment, which appeared on the next screen. The SR2K consisted of eight questions and three additional demographic questions that asked for the participant's age range, race, and gender. The demographics questions were asked for in both the SR2K and the Race IAT in the event that one of the tests malfunctioned. The SR2K was presented via a window as a Qualtrics survey questionnaire. The data from the questionnaire was automatically submitted electronically to a secure database via the Qualtrics Corporation website and was accessible to the researcher via a username and password prompt.

### **Data Analysis**

The following quantitative data were collected for each participant: demographic information, group membership (i.e., control or treatment), and post-test implicit and explicit attitude score. The primary purpose of the quantitative analysis was to answer the two research questions of the study:

1. Will the incorporation of attitudinal strategies within web-based instruction influence the participants' implicit attitudes, as measured by the Race Implicit Association Test (Race IAT)?
2. Will the incorporation of attitudinal instruction strategies within web-based instruction influence the participants' explicit attitudes, as measured by the Symbolic Racism Test 2000 (SR2K)?

For the first question, post-test IAT scores were compared between the control group and the experimental group. The scores for the IAT for both the control and treatment groups were compared to zero using a one-sample  $t$ -test. The scores of the two groups were then compared using an independent sample  $t$ -test. For the second question, the relevant data were analyzed using an independent sample  $t$ -test to compare the post-test SR2K scores of the treatment group with the post-test SR2K scores of the control group. The SPSS statistics program was used for the quantitative data analysis.

## CHAPTER 4: RESULTS

The purpose of this experimental study was to investigate the effectiveness of instructional design strategies intended to influence implicit attitudes in the direction of the target attitude as measured by the Race Implicit Association Test (Race IAT) (Greenwald et al., 1998) and explicit attitudes as measured by the Symbolic Racism Test 2000 (SR2K) (Henry & Sears, 2002).

Quantitative analysis was used to determine the effectiveness of the incorporated instructional design strategies for influencing attitudes.

### **Research Question # 1: Implicit Attitudes**

The first question in which the data were quantitatively analyzed was:

1. Will the incorporation of attitudinal strategies within web-based instruction influence the participants' implicit attitudes, as measured by the Race Implicit Association Test (Race IAT)?

For research question number one, the incorporation of attitudinal strategies within web-based instruction, as measured by the Race Implicit Association Test, resulted in no significant difference between control and treatment groups in regard to implicit attitudes.

The test creators Greenwald, Nosek, and Banaji state that “The IAT effect (a D score) has a possible range of -2 to +2. Break points for ‘slight’ (.15), ‘moderate’ (.35) and ‘strong’ (.65) were selected conservatively according to psychological conventions for effect size” (Project Implicit, 2012, p. 1). The overall mean score of 0.38 for the treatment group reflects a moderate automatic preference for Caucasians; the overall control group's mean score is 0.55, which represents a moderate to strong preference toward Caucasians (see Table 2).

Table 3 shows the Levene's test for the equality of variances between the control group and treatment group. The P-value is 0.097, which is not statistically significant; but it is so close that equal variances are not assumed. The P-value (0.241) for the hypothesis test is in bold font in Table 3. The reason this P-value is used is due to the test for equal variances rejecting the null hypothesis of equal variance between groups.

Table 2. Raw group statistics for question 1 (Dscore)

Group Statistics					
group		N	Mean	Std. Deviation	Std. Error Mean
Dscore	Control	25	.54652	.386635	.077327
	Treatment	25	.38120	.576698	.115340

Table 3. Raw independent samples t-test results for question 1 (Dscore)

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Dscore	Equal variances assumed	2.863	.097	1.191	48	.240	.165320	.138862	-.113881	.444521
	Equal variances not assumed			1.191	41.949	<b>.241</b>	.165320	.138862	-.114925	.445565

## Research Question # 2: Explicit Attitudes

The second question in which the data were quantitatively analyzed was:

2. Will the incorporation of attitudinal strategies within web-based instruction influence the participants' explicit attitudes, as measured by the Symbolic Racism Test 2000 (SR2K)?

The Symbolic Racism raw score range is from 8-31, with 8 being the score that indicates the lowest level of symbolic racism and 31 indicating the highest level of symbolic racism. The average score for both the control and treatment groups is around 18, which denotes a score for symbolic racism that is a little higher than the midpoint of 11.5 (see Table 4).

For research question number two, the incorporation of attitudinal strategies within web-based instruction, as measured by the Symbolic Racism Test 2000 (SR2K) test, resulted in no significant difference between control and treatment groups in regard to influencing implicit attitudes. Levene's test for equality of variances was not significant (0.433); this supported the null hypothesis of equal variance between groups. Therefore the  $P = 0.592$  (see Table 5).

*Table 4.* Raw group statistics for question 2 (SR2K)

Group Statistics					
	Group	N	Mean	Std. Deviation	Std. Error Mean
RawScore	control	25	18.0000	2.44949	.48990
	treatment	24	18.3333	1.80980	.36942

Table 5. Raw independent samples *t*-test results for question 2 (SR2K)

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
RawScore	Equal variances assumed	.624	.433	-.540	47	<b>.592</b>	-.33333	.61734	-1.57527	.90860
	Equal variances not assumed			-.543	44.156	.590	-.33333	.61357	-1.56979	.90312

## CHAPTER 5: DISCUSSION

This quantitative study examined several attitudinal instructional strategies aimed at influencing participants' implicit and explicit attitudes as to how they relate to racial profiling. It is one of the few empirical studies within the field of instructional design and technology to have examined the effects of attitudinal instructional strategies aimed at manipulating or influencing existing explicit attitudes in the direction of a target attitude. There are few models, guidelines, and strategies within the field of instructional design and technology that examine attitudes as variables; they are supported only by theoretical underpinnings and have not been empirically tested (Simonson & Maushak, 1996). As Simonson and Maushak (1996) have pointed out, less than 5 percent of the existing studies within the field of instructional design have examined attitudes. Simonson and Maushak (1996) also called for studies that had clearly defined variables, applicable research questions, and a control group. Keeping in compliance with Simonson and Maushak's recommendations, this study consisted of quantitative methods with clearly defined variables, specific research questions, and a control group.

A thorough review of attitude studies within the field of instructional design and technology indicates that Newbill's (2005) study was one of the only empirical studies appearing in the literature. Newbill's study has contributed to the instructional technology and design research base by providing a thorough, well-designed empirical study. Newbill's study also empirically tested Kamradt and Kamradt's (1999) structured design for an attitudinal instruction model.

This study also attempted to further empirically test Kamradt and Kamradt's (1999) model. In addition, other attitudinal strategies that have been developed within the field of instructional design were empirically tested. These included Gagne's (1988) principles of

instructional design, Bednar and Levie's (1993) 22 principles for attitude change, and Simonson and Maushak's (1996) six guidelines for attitude change or *model of cumulative effect*.

This also is the first empirical study within the field of instructional technology to have examined implicit attitudes and attitudinal strategies aimed at influencing implicit attitudes. Strategies for manipulating implicit attitudes from social psychology, such as modeling via positive and negative exemplars and credible news sources, were also integrated with existing instructional design strategies (Bertrand et al., 2005; Greenwald, 1965; Greenwald & Banaji, 1995; Stepanikova et al., 2011). As a result, this study was the first in the field of instructional design and technology to utilize Harvard's Race Implicit Association Test as an instrument to measure implicit attitude change. The Implicit Association Test is one of the most-validated and progressive instruments used to measure implicit attitudes.

Finally, many of the existing attitudinal instructional strategies within the field of instructional design and technology have focused on attitudes towards content, instruction, or the instructor. Following in the path of Gagné (1988) and Bandura (1977), this study focused on attitudes in a broader sense as learning outcomes regarding beliefs and values about objects, ideas, people, or events. Newbill's (2005) study did focus on both content, and values and beliefs, regarding the idea of women in science.

### **Results Summary**

An independent sample *t*-test indicated no statistically significant difference between control group and treatment group mean raw scores. Therefore, the incorporation of attitudinal strategies within web-based instruction did not significantly influence the participants' implicit attitudes, as measured by the Race Implicit Association Test (Race IAT).

There was also very little difference in the overall mean raw scores for both the treatment and control groups on the Symbolic Racism Test 2000 (SR2K), resulting in no statistically significant difference between the two groups. Thus, the incorporation of attitudinal strategies within web-based instruction did not significantly influence the participants' explicit attitudes, as measured by the Symbolic Racism Test 2000 (SR2K).

### **Study Limitations**

A few factors limited the generalizability of this quantitative study. First, the course was two hours in duration and was presented all at one time. Initially, the goal for the study was to take the existing training structure and materials and modify them in a way that a treatment could be integrated into the current format. The actual training consisted of a two-hour asynchronous learning module. The last half hour of the two-hour session was used to integrate the treatment, which consisted of attitude manipulation strategies from both social psychology and instructional design and technology literature. For the Department of Criminal Justice Services, two hours of online instruction is equivalent to and accounts for ten hours of face-to-face instruction. This two-hour block of instruction provided 10 (2 for cultural diversity and 8 for career development) of the 40 instructional in-service credit hours annually required for law enforcement personnel by the state of Virginia. The terms of the study required that the training be created to meet an immediate time-mandated need for the police academy. Therefore, time was a definite limitation in regard to this study.

Also, there is a possibility that the given strategies suggested by the literature are simply not effective, or as effective as suggested, when empirically tested in a real environment. The attitudinal instructional strategies from the instructional design and technology field are based on research and theories from other fields such as psychology, journalism, and communications.

Newbill's (2005) study on incorporating strategies to improve women's attitudes toward science is the only research found in the instructional design and technology literature that provided empirical testing of the strategies and guidelines incorporated in this treatment.

Another limitation for this study is the possibility that the strategies may be effective but were not accurately interpreted for the instructional treatment in this study. In addition, even if the strategies were properly interpreted, they simply may not have been adequately applied to the treatment. For example, the first step of Kamradt and Kamradt's (1999) model, activation of the most-dissonant attitudinal component, may not have been applied correctly or effectively in this study. If this one step is not effectively applied, then the possibility of influencing the participants' most-dissonant attitude in the direction of the target attitude is unlikely to occur, which will, in turn, render the entire treatment ineffective.

And finally, the instructional modules were completed independently and without supervision. So, there was no way to know whether the participants read carefully and attended to either the instructional content or assessment item questions.

### **Conclusion**

The purpose of this study was to determine if the incorporation of attitudinal strategies within web-based instruction can effectively influence participants' implicit attitudes and explicit attitudes toward the direction of a target attitude. Due to the serious limitations of this study we still do not know the answer to these questions. Future studies may yield different results if many of the significant limitations can be overcome by researchers attempting to answer these questions.

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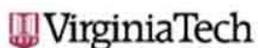
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## APPENDICIES

### A IRB Approvals.



Office of Research Compliance  
Institutional Review Board  
2000 Kraft Drive, Suite 2000 (0497)  
Blacksburg, VA 24060  
540/231-4606 Fax 540/231-0959  
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#### MEMORANDUM

**DATE:** June 18, 2012  
**TO:** Katherine S Cennamo, Samuel Raymond Jennings  
**FROM:** Virginia Tech Institutional Review Board (FWA00000572, expires May 31, 2014)  
**PROTOCOL TITLE:** Structured Design Strategies for Attitude Instruction  
**IRB NUMBER:** 12-590

Effective June 18, 2012, the Virginia Tech Institution Review Board (IRB) Chair, David M Moore, approved the New Application request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

#### PROTOCOL INFORMATION:

Approved As: **Exempt, under 45 CFR 46.110 category(ies) 2**  
Protocol Approval Date: **June 18, 2012**  
Protocol Expiration Date: **N/A**  
Continuing Review Due Date\*: **N/A**

\*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

#### FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

*Invent the Future*

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY  
*An equal opportunity, affirmative action institution*

**B Anne Bednar and Howard Levie's (1993) 22 Principles For Attitude Change.**

Principles	Theoretical Foundations
1. High credibility sources exert more persuasive influence than low-credibility sources.	The Source-Classic SMCR (the source presents a Message through a Channel to a Receiver) model
2. Sources perceived by the receiver as attractive are more influential.	
3. The quality and structure of the arguments in a persuasive message are more critical for credible sources than for attractive sources.	
4. Be sure the receiver is informed of the expertise of a high-credibility communicator.	
5. To enhance communicator attractiveness, establish belief congruence with the receiver by arguing in favor of positions the receiver is known to hold.	
6. Arguments are more effective if they are relevant to the receivers needs.	
7. Generally, two-sided arguments are slightly more effective than one-sided messages. (This guideline is qualified by the statement that receivers should be familiar with the issue, disagree with the desired attitude, and be intelligent and inquisitive. If receivers already hold the desired attitude, presenting weak arguments against the undesired attitude may make desired attitudes stronger.)	
8. It is almost always advisable to state the conclusion explicitly rather than to allow receivers to draw their own conclusions.	
9. Repetition helps, but only one or two repetitions are likely to have any additional effect.	
10. No one media type has been explicitly shown to have greater persuasive effectiveness than any other media type. Face-to-face communication, however, is more effective in promoting acceptance than mediated communication, particularly in difficult cases (Channel Principle).	
11. It is very difficult to change the attitudes of receivers who are highly committed to their position on an issue (Receiver Principle).	
12. High-credibility models exert more persuasive influence than low-credibility models.	
13. In order for modeling to be effective, the learners must comprehend the presentation as a demonstration of specific behaviors.	
14. In addition to observing the model demonstrating the behavior, learners should observe the model being reinforced for that behavior.	
15. Role-playing can have powerful persuasive impact.	
16. Active participation produces more attitude change than passive reception of information.	Dissonance Principles Festinger's (1957) cognitive dissonance theory
17. If a person can be induced to perform an important act that is counter to the person's own private attitude, attitude change may result.	
18. When a person is induced to perform an attitudinally-discrepant act because of promise of reward or punishment, attitude change will occur only to the extent that the person feels the magnitude of the reward or punishment was insufficient to justify the attitudinally-discrepant behavior.	
19. Demonstrate the social acceptability of the desired attitude and the reward available socially for behavior consistent with the attitude.	

20. Alternate between presenting information discrepant with existing beliefs and inducing behaviors discrepant with existing attitudes to maximize dissonance.	
21. Structure attitude-change lessons so that attention is paid to the cognitive (information), affective (feeling), and behavioral (acting) elements of the attitude.	
22. Use successive approximations to move attitudes gradually between a current status and a desired state.	

**C Instructional Intervention Process.**

<p><b>Model</b>  <b>Kamradt and Kamradt (1999), Structured design for attitudinal instruction (tactics)</b></p>	<p><b>Instructional Treatment</b>  <b>Step-by-step process</b>  <b>Approximately 30 minutes in duration</b></p>	
<p><b>1 - Activation</b> (of the attitude associated with the given topic).</p>	<p><u><b>5 minutes</b></u></p>	
	<p>The first page appears with a scenario (below) from an off duty police officers perspective.</p>	<p><b>Activation of the initial attitude in order to cause slight dissonance. This scenario allows for the activation of the participant's attitude about racial profiling.</b></p>

<p><b>Present a situation which calls for its use (behavior).</b></p> <ul style="list-style-type: none"> <li>• Can be direct or indirect activation.</li> <li>• The action should be slightly inconsistent with the learner's existing attitude and in the direction of the target attitude (adjust if necessary). This creates dissonance.</li> </ul>	<p><b>Please read the hypothetical scenario below and answer the questions that follow:</b></p> <ul style="list-style-type: none"> <li>• You are of an off duty police officer and you are stopped in a row of traffic on a back road.</li> <li>• You realize that you are in a routine road check being conducted by local law enforcement officials who are all of the same race.</li> <li>• There is at least four other cars in front of you.</li> <li>• You are in close proximity and stopped in such a manner that you clearly see and hear what is taking place with the other drivers in front of you.</li> <li>• You notice that the driver in the first car (who is the same race as the police officers) does not have a seat belt on (which is mandatory in the locality that the road check is taking place). The officer issues a warning and asks the driver to move along.</li> <li>• The second car pulls up and has a tail light out. This driver is a different race than the police officer. The driver explains to the officer that she is going for an inspection during the upcoming week. The officer motions the car over to the side and begins issuing a citation for defective equipment. Another officer moves up and takes the original officer's place for the next car.</li> <li>• The next car pulls up to the new officer. The officer tells the driver (who is the same race as the police officers) that the left headlight is out. The driver explains that the car is going be inspected the coming week. The officer issues a warning and motions the car to move on.</li> <li>• The officer then walks up to the third car (the car in front of you), asks the driver (who is a different race than the police officers) for his license and registration while another officer walks to the other side of the car carefully inspecting the vehicle. The officer asks for the driver's social security number and asks him to pull off of the road while he checks his license. He is detained for about fifteen minutes and then released with no citations or warnings issued. The officer thanks the driver and tells him that he is free to go.</li> </ul>
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<p><b>2 - Diagnose dissonance</b></p> <ul style="list-style-type: none"> <li>• How did that situation make you feel? (affective)</li> <li>• What were you thinking? (cognitive)</li> <li>• Why did you do what you did? (behavioral)</li> </ul>	<p><b><u>3 minutes</u></b></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 0 auto;"> <p>After reading the scenario the next page displays three questions (below):</p> </div>	<p>These questions (in regards to the given scenario) allow for the diagnosis of the most dissonant attitudinal component.</p>
<p>Affective (Emotional)</p>	<p>How would this make you or someone else feel as the driver?</p>	
<p>Cognitive (Thinking)</p>	<p>What aspects of the officer’s behavior do you think constitutes racial profiling (if any)?</p>	
<p>Psychomotor (Behavior)</p>	<p>How would you respond or should someone else respond to this situation? How would you reduce the perception of racial profiling for you and your department?</p>	<p>The participant will autonomously select which attitudinal component is most important to him or her in chronological order. Kamradt and Kamradt (1999) contend that for the model to work the participant must willingly participate. Also, the asynchronous online learning environment provides a “safe place” for the participant try out the new attitude if the new target attitude has been reached.</p>
<p><b><u>3 - Address whichever component is most dissonant.</u></b></p> <ul style="list-style-type: none"> <li>•If affective, use operant conditioning techniques.</li> <li>•If cognitive, use persuasion.</li> <li>•If behavioral, use demonstrations and practice for the action.</li> </ul>	<p>Of the three questions you were given which do you find to be the most important order from 1-3 (how you feel, what you think, or what you do)?</p> <p>Once you decide the order of importance in regard to the scenario select the following link button options in the order you’ve chosen.</p> <p><b>How I feel   What I think   What I would do</b></p>	

<p><u>Content example (Affective):</u> Pain, hunger, anxiety, friendship, love, pride, anger, fun, competitiveness, embarrassment</p> <p><u>Type of learning:</u></p> <p>Conditioning ++ • 1) Operant 2) Respondent</p> <p><u>Example of learning events:</u></p> <ul style="list-style-type: none"> <li>- present stimulus</li> <li>- elicit response</li> <li>- reinforcing or extinguishing contingency efforts (e.g. A reward or punishment scenario)</li> </ul>	<p style="text-align: center;"><b><u>How I feel</u></b></p> <p>*Results of perceived biased policing versus results of unbiased policing (<b>5 minutes</b>):</p> <p><b>Video of minority’s perceptions about law enforcement and how they feel about racial profiling (talks about Louise Gates incident where Officer Crowley is accused of racial profiling Professor Gates).</b></p>	<p>Here (where the perceptions of biased-based policing are reviewed), <b>negative punishment</b> is being applied (use the word "decrease"). Negative punishment is when someone takes away my ability to do something. Profiling causes a decline or decreases positive about police subjects of racial profiling. According to the officer in the first video the attitudes about profiling by the subjects of racial profiling decreases the ability of officers to effectively perform their job.</p> <p>Former Federal prosecutor (African American) racially profiled serves as a <b>positive credible exemplar</b> both as a victim and as an authority figure. Also, a retired New York state trooper (Caucasian male) is a <b>positive credible exemplar</b> as a law enforcement advocate for the reduction of biased-based policing. <b>Mental imagery</b> (Blair &amp; Lenton, 2001) is also used here as accusations from credible African American victims indicate an increase in racial profiling and biased-based policing. The accused officers are <b>counter stereotypes of models to change attitudes</b> (Blair &amp; Lenton, 2001). Finally, the media source is considered a <b>credible source</b>.</p>
	<p><b>Video of Officer Crowley’s support from fellow minority officers. Two of Officer Crowley’s fellow African American Officers come to his aid in the media.</b></p>	<p>For the video regarding the support from fellow African American police officers for officer Crowley during the Henry Lewis Gates <b>incident intangible positive reinforcement</b> is being applied. For Crowley the issue is profiling or not profiling and following</p>

		<p>protocol or not following protocol (is intangible because it increased his sense his degree of self-respect and affirmed his personal sense of ethics). For the participants <b>vicarious positive reinforcement</b> is used. The participants in the study are police officers and will see themselves living vicariously through Crowley and the other two officers.</p> <p>Both officers also serve as <b>credible positive exemplars</b>. Crowley, in a sense becomes a <b>positive exemplar</b> for following procedure via the two supporting officers. The media source (CNN and CBS news) is considered to be a <b>credible source</b> in information.</p>
	<p><b>- Video of African-American news reporter rescuing a Caucasian man from a violent attack.</b></p>	<p>Here, an African American reporter is saving a Caucasian victim from an attack from African American attackers. <b>vicarious positive reinforcement</b> is being used which (again, a form of operant and respondent conditioning). The participants will see themselves vicariously as both the victim and as the hero.</p> <p>The reporter is a <b>credible positive exemplar</b> and source as both an African American male and as a news reporter for KOMO 4 News. Again, the source of information is reported via a <b>credible news source</b> as well (KOMO 4 News).</p>

<p><u>Content example (Cognitive):</u> Facts, principles, rules Concepts <u>Type of learning:</u> Cognitive learning + - Knowledge - Comprehension - Application - Creation <u>Example of learning events:</u> - recall pre-requisite or related knowledge - present new information - present close-in non-examples - present model examples - provide novel situations - for application and generalization of new knowledge (e.g. experiments, case studies)</p>	<p style="text-align: center;"><b><u>What I think</u></b></p> <p>*Some facts (new information) about racial profiling (5 minutes):</p> <p><b>- Presentation with facts and data about racial profiling.</b></p> <p><b>-Video with “more facts” about racial profiling (still images, associated facts in the form of text, and music).</b></p>	<p><b>Cognitive learning</b> is taking place as knowledge is being obtained via recall of pre-requisite knowledge, the presentation of new information, and generalization of new knowledge.</p> <p>For the video with “more facts” about racial profiling, recall of pre-requisite knowledge, the presentation of new information, and generalization of new knowledge are also taking place as <b>cognitive learning</b>. In addition, model examples are being presented via static images, associated text, and music.</p>
<p><u>Content example (Psychomotor):</u> Athletics, computer keyboard and mouse usage, manual tool manipulation, musical instrument operation, dancing <u>Type of learning:</u> Motor Skill Learning+ - Imitation - Manipulation - Precision - Articulation <u>Example of learning events:</u></p>	<p style="text-align: center;"><b><u>What I would do</u></b></p> <p><b>-Presentation on “When and when not to take police action based on race” and on “How to avoid racial profiling.”</b></p> <p><b>-Follow-up word quiz game (based on verbal information/demonstration of what to do or no to do and when to do something and when not to do something).</b></p>	<p>For these two presentations <b>demonstration</b> and <b>step-by-step instruction</b> is provided via text-based descriptions of what to do and what not to do as well as when to do something and when not to do something.</p> <p>For the word quiz game <b>motor skill learning</b> occurs via <b>imitation, demonstration, manipulation, precision, and guided feedback.</b></p>

<ul style="list-style-type: none"> <li>- demonstration</li> <li>- step-by-step instruction</li> </ul> <p>practice with guided feedback</p>		
<p><b><u>4 - Consolidate the attitude including transfer events and organizational development resources:</u></b> at one point on the continuum before proceeding.</p> <ul style="list-style-type: none"> <li>• Include explicit transfer events and an organizational development plan.</li> </ul> <p><b>Support</b> - Provide resources for information about law enforcement support, training, and policies regarding racial profiling. These support systems should be in place to provide support for the new attitudes after the even after the intervention has physically dispersed.</p> <p><b>Threats</b> - Reiterate the challenges, pitfalls, and outcomes of bias-based policing and racial profiling.</p> <p><b>Exceptions</b> – Explain/reiterate situations that may call for new attitudes and ones that do not (for example, officer safety first priority). “Learning when and when not to apply new attitudes requires practice, and</p>	<p><b>What have we learned and how can what have learned be applied to the workplace (3-5 minutes)?</b></p> <p>What kind of support resources are available to ensure a bias free policing situation at my department?</p> <p>What are some examples of biased-based policing?</p> <p>What are some examples of responsible unbiased policing?</p> <p>What are some of the negative outcomes of biased-based policing?</p> <p>What are some positive results for unbiased policing?</p> <p>How can I perform my duties as a police officer in an unbiased manner?</p>	<p><b>Support:</b></p> <ul style="list-style-type: none"> <li>• Refer to your department’s policy manual regarding biased-based policing.</li> <li>• Work with peers and immediate supervisors regarding policies and procedures that pertain to biased-based policing.</li> <li>• Check with administrators and training coordinators in your local agency to find resources on biased-based policing.</li> <li>• Contact training coordinators at your regional DCJC certified training center for training and information on biased-based policing.</li> <li>• Access the United States Department of Justice for more information on biased-based policing: <a href="http://www.cops.usdoj.gov/Publications/e08086157.pdf">http://www.cops.usdoj.gov/Publications/e08086157.pdf</a></li> </ul> <p><b>Threats:</b></p> <p>(Challenges/Pitfalls/Outcomes)</p> <ul style="list-style-type: none"> <li>• Racially biased policing is at its core a human rights issue.</li> <li>• Racially biased policing is not solely a “law</li> </ul>

<p>identifying exceptions while still in the classroom can protect new attitudes from unnecessary risks” (Kamradt &amp; Kamradt, 1999, p. 590).  <b>Plans</b> – Reiterate list of items from support, threat, and exceptions sections in a bulleted list.</p>		<p>enforcement” problem.</p> <ul style="list-style-type: none"> <li>• Police personnel around the country <i>want to respond effectively to local and national concerns</i> regarding racially biased policing.</li> <li>• Realize that racial profiling is NOT criminal profiling.</li> <li>• Treating everyone equitably with respect and consistency will result in respect and cooperation.</li> <li>• By following policies, procedures, and guidelines as prescribed by your department you will be considered to be professional and trustworthy by the citizens that you serve.</li> </ul> <p><b>Exceptions:</b></p> <ul style="list-style-type: none"> <li>• Police officers should take action on basis of race and criminal activity is occurring.</li> <li>• Police officers should NOT take action on basis of race and criminal activity is NOT occurring.</li> </ul>
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## D Informed Consent Form

### Informed Consent

This page tells you about the study so that you may make an informed decision about participating in it.

Title of study: Structured Design Strategies for Attitude Instruction

Investigators: Samuel Raymond Jennings, doctoral student, Principal Investigator and Katherine S. Cennamo, Advisor

The instructional unit will take up to 120 minutes. There are two surveys that will take approximately 10 - 15 minutes to complete. One will be taken before the instruction and one at the end of the instruction. Participation in the study will require 15-30 minutes beyond the 2 hour block of instruction.

#### I. The Purpose of the Study

The purpose of this study is to examine instructional strategies to improve online instruction for law enforcement personnel.

Samuel R. Jennings, a doctoral candidate at Virginia Tech in the School of Education, is conducting the study. There are no foreseeable risks in participation. Participation in this survey is entirely voluntary. All participation will be completely anonymous and confidential. If you have any questions about this study and your rights, please contact Samuel R. Jennings, doctoral candidate at Virginia Tech at 540-691-7220 or sajenni1@vt.edu.

#### II. Procedures

During the study, you will respond to two 8-item surveys. You will also work through an instructional module about biased-based policing.

Electronically signing this form constitutes agreement to participate in the project.

#### III. Risks

There are no anticipated risks to you as a participant. Participation in the study will require a total of about 2 hours and 30 minutes of your time.

#### IV. Benefits of this Project

This project will contribute to our understanding of how instructional strategies can be implemented to improve the effectiveness of online instructional modules for law enforcement personnel.

#### V. Anonymity and Confidentiality

The results of this study will be kept confidential.

- The staff at your police academy or police department will not see your individual responses or know your identity.
- Your name and other personal identifiers will not be associated with the information you provide.
- No personal identifying marks will be present on any data forms.

- Data will be analyzed without personal identification.
- All data resulting from this study will be kept in a locked safe in the doctoral investigator's home, and all the data will be digitized and stored on a secure computer.
- Any publications from the research will use pseudonyms and mask personal identifiers.

#### VI. Compensation

There is no compensation from the project investigators for participating in this project.

#### VII. Freedom to Withdraw

You are free to withdraw from this study at any time without penalty.

#### VIII. Participant's Responsibilities

You are responsible for completing each task in the study within the specified time frame.

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#### X. Participant's Permission

I have read and understand the Informed Consent Form for Participants and the conditions of this project. I have had any questions I had about the project answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw at any time without penalty. I indicate my agreement by entering my email address and clicking "submit" below.

Should I have questions about this research project, I may contact:  
Samuel R. Jennings, Principal Investigator (sajenni1@vt.edu, 540/691-7220)

Dr. Katherine Cennamo, Advisor (cennamo@vt.edu)

By clicking the "submit" button, I agree to participate in the study (otherwise, select the "Esc" button to opt out and be redirected).

**SUBMIT**

## E. Expert Reviews

Phyllis Newbill

- 1) Is the instruction effective?

**I think the instruction has the potential to be effective. The practice elements that are listed in the treatment procedures do not appear to be present in the treatment itself. Those are important.**

- 2) Does it include the design elements recommended by the model (Kamradt and Kamradt's model)?

**Yes, you've made clear connections between the different components of attitude change and the elements of your instruction. I have a recommendation about your initial attitude-activating scenario.**

**There is a problem with your attitude activation. You have a very specific audience (law enforcement) in mind, and your scenario involves them, but it is not from their point of view. In your activating scenario, the subject is a citizen in a traffic stop. In your first set of questions, some questions seem to be directed at the citizen and others are directed at LE (i.e., your department). The scenario, as it stands now, begs some questions. Are they in another locality when the scenario occurs? Should they respond as LE (as in, telling a supervisor/peer in the offending department) or as a citizen (as in, writing a letter to the offending department or to the editor of the local paper)? Think hard about whose attitudes you want to change when you decide how to revise this part. I recommend that you change the opening scenario so that it is from a LE point of view. The subject could be an officer from another jurisdiction, an observer at the traffic stop, or a trainer. You could also change the scenario to one where someone or a peer is accused of racial profiling – perhaps a more relevant situation to your audience.**

- 3) Does the instruction adequately integrate the various proposed attitudinal strategies into the model?

**Yes, but you need to include the practice elements described in your treatment procedures. I also recommend that you add a reflection activity at the end to solidify the changed attitude.**

- 4) Do you have any suggestions for improvement?

**In the What I Think treatment, you have a number of facts that don't have citations. If you can add those citations, you will improve your chances of changing attitudes. Consider, also, the sources of your facts. Amnesty International has a clear agenda, and their conclusions may or may not be recognized as fact by the wider population.**

**In the What To Do treatment, you have a scenario where criminal activity is not occurring, and someone is stopped who is not the correct suspect. This confuses me. How is there a suspect if there is no crime?**

**You cut off the citation information on the How to Avoid Racial Profiling article. It contains a couple of distracting errors (i.e., in #7, haunches should be hunches). Also, Item 5 is before**

**Item 4.**

**On Slide 3 of the How I Feel intervention, there is a picture of Officer Kelly King. She is not mentioned in the article. I'm not sure why the picture is there. Also on that slide, there are a few spacing errors that are causing quotation marks to turn the wrong way, which interferes with readability.**

**On your treatment page, under Support, you need an apostrophe in "your department's policy." Ask a skilled editor to proofread your entire treatment. You can do that after the IRB is submitted. Under Exceptions, it looks like you are missing a word (like when or where).**

**How are you assessing attitude change? I see something about the IAT in your Expert Review Document. Does this metric specifically address law enforcement and racial profiling, or is it a more general thing? I am asking because there is some likelihood that the pre-test could serve as your attitude activation. In any case, the evaluation is part of the instruction. Its presence cannot be ignored in the context of the Kamradt and Kamradt methods.**

**Good luck with your dissertation process, and let me know if I can provide any other assistance.**

**~Phyllis Newbill  
pnewbill@vt.edu**

Dr. Rob Goralewicz

1) Is the instruction effective?

**Yes.**

2) Does it include the design elements recommended by the model (Kamradt and Kamradt's model)?

**Yes.**

3) Does the instruction adequately integrate the various proposed attitudinal strategies into the model?

**Yes. The proposed strategies for attitudinal instruction have been adequately integrated into the instruction. The following should be noted in terms of apparent attitudinal strategies in the form of operant and respondent conditioning.**

**For the first video first video in the treatment (where the perceptions of biased-based policing are reviewed) negative punishment is being applied (use the word "decrease"). Negative punishment is that someone took away my ability to do something. An aspirin would be an example of a negative reward. Profiling causes a decline or decreases positive**

about police subjects of racial profiling. According to the officer in the first video the attitudes about profiling by the subjects of racial profiling decreases the ability of officers to effectively perform their job.

For the video regarding the support from fellow African American police officers for officer Crowley during the Henry Lewis Gates incident intangible positive reinforcement is being applied. For Crowley the issue is profiling or not profiling and following protocol or not following protocol (is intangible because it increased his sense his degree of self-respect and affirmed his personal sense of ethics). For the participants vicarious positive reinforcement is used. The participants in the study are police officers and will see themselves living vicariously through Crowley and the other two officers.

For the next video with the African American reporter is saving the Caucasian victim for an attack vicarious positive reinforcement is being used which is a form of operant conditioning.

4) Do you have any suggestions for improvement?

**Yes. Make sure to note and elaborate the attitudinal strategies listed in the last question (question 3) into the treatment procedure table. Add both the videos and associated images to the scenarios.**

**Dr. Rob Goralewicz**  
rgoralewicz@dslcc.edu

## F. Instructional Materials

The image shows two screenshots of a web browser displaying the Cardinal Criminal Justice Academy's Online Training Center. The top screenshot is the login page, and the bottom screenshot is the user's dashboard.

**Cardinal Criminal Justice Academy's Online Training Center Login Page:**

Username:   
 Password:   
 Login

Forgot your password?  
 By clicking Login, you agree to these terms.

Enrollment Codes are often provided by an organization to pre-register for courses. If you have been provided an Enrollment Code, click here.

Visit the online store for your own personal training. Purchasing requires an active login, but does not affect your organization's training contract.

We recommend the use of Internet Explorer 7 for the best viewing of your content.

For assistance or if you have a question about purchasing our online training, you can email us at [tcmsupport@cardinalcjc.org](mailto:tcmsupport@cardinalcjc.org).

**Cardinal Criminal Justice Academy Dashboard:**

Cardinal Criminal Justice Academy  
 The TRAX International Learning Content Management System

Logout

Dashboard | Past Courses | Profile | Store | Instructions

**My Courses** *Email in more courses*

Course	End Date	Progress
Biased Policing 1		8 of 11 assignments complete
Biased Policing 2		8 of 10 assignments complete

**My Completed Courses**

Course	Completion Date	End Date
Biased Based Policing	Jul 05, 2012	
Biased Based Policing 2	Jul 16, 2012	

Not finding what you're looking for? Check your past courses page.

**Dashboard**

Welcome to the Dashboard! Students may use this screen to view their currently enrolled courses, each course's effective expiration date, and their progress within each course. Courses consist of combinations of Lessons, Quizzes, and other files which you may download and review on your local computer. Students will be expected to complete all required course syllabus items to pass the course. Application specific instructions may be found in the Instructions tab.

Version 1.4.4 | Get Help | Logged in as: J0013 | © 2007 - 2011 TRAX International

Firefox - KU MyRU - Radford University | Your Assignments | Cardinal Criminal Justice Academy

https://online.cardinalcja.org/lcms-1.0/courseAssignments.html?id=13\_71

Cardinal Criminal Justice Academy  
The TRAX International Learning Content Management System

Logout

Dashboard Past Courses Profile Store Instructions

### Basic Courses - (BP 3) Biased Based Policing 3

Course is Complete  
Go to current assignment

**BIASED BASED POLICING**

- COMPLETE BP INFORMED CONSENT  
Complete: Started 2012-07-16 16:29:11, Completed 2012-07-16 16:30:16
- REVIEW MODULE 1  
Module 1  
Complete: Started 2012-07-16 16:30:24, Completed viewing 2012-07-16 16:30:24
- REVIEW MODULE 2  
Module 2  
Complete: Started 2012-07-16 16:30:56, Completed viewing 2012-07-16 16:30:56
- REVIEW MODULE 3  
Module 3  
Complete: Started 2012-07-16 16:31:39, Completed viewing 2012-07-16 16:31:39
- REVIEW MODULE 4  
Module 4  
Complete: Started 2012-07-16 16:33:42, Completed viewing 2012-07-16 16:33:42
- REVIEW MODULE 5  
Module 5  
Complete: Started 2012-07-16 16:34:27, Completed viewing 2012-07-16 16:34:27
- REVIEW MODULE 6(B)  
Module 6  
Complete: Started 2012-07-16 16:34:58, Completed viewing 2012-07-16 16:34:58
- REVIEW MODULE 7  
Module 7  
Complete: Started 2012-07-16 16:35:39, Completed viewing 2012-07-16 16:35:39
- REVIEW A 1  
Complete: Started 2012-07-16 16:36:04, Completed 2012-07-16 16:46:23 (2 of 2 slides viewed)
- TAKE BIASED BASED POLICING  
Passed: 85% (17 / 20) - time taken: 00:04:33

Course Assignments

To begin, click the blue link on the left. This will take you to a presentation, a quiz, an evaluation, or ask you to download a resource. For a downloadable resource, you will see a timer begin to count down. Once that resource is finished, please reload the page and click on the next resource. To complete the course, you must complete each required resource, which is reflected by having a check in the checkbox next to each resource. Some resource assignments will not allow you to check the checkbox. For these, you must continue through the assignment until it is complete.

4:13 PM 8/21/2012

Firefox - KU MyRU - Radford University | Review Module 1 | Cardinal Criminal Justice Academy

https://online.cardinalcja.org/lcms-1.0/htmlContentResourceAssignmentForm.html?id=1469305

Cardinal Criminal Justice Academy  
The TRAX International Learning Content Management System

Logout

Dashboard Past Courses Profile Store Instructions

### Review Module 1

Click here to return to the syllabus.

bbpm1 (00:02 / 07:43) | ATTACHMENTS

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Outline Thumbnails Notes Search

1. Bias-Based Policing A Study for the Comm...
2. Bias-Based Policing A Study for the Comm...
3. Bias-Based Policing A Study for the Comm...
4. Bias-Based Policing A Study for the Comm...
5. Slide 5
6. Bias-Based Policing A Study for the Comm...
7. Bias-Based Policing A Study for the Comm...
8. Bias-Based Policing A Study for the Comm...
9. Bias-Based Policing A Study for the Comm...
10. Bias-Based Policing A Study for the Comm...
11. Slide 11
12. Bias-Based Policing A Study for the Comr...
13. Bias-Based Policing A Study for the Comr...
14. Slide 14
15. module1

*Cardinal*

**Bias-Based Policing:  
A Study for the Commonwealth of Virginia**

**Module 1**

4:13 PM 8/21/2012

Firefox | KU MyRU - Radford University | Review Module 1 | Cardinal Criminal Justice Academy

https://online.cardinalcja.org/lcms-1.0/htmlContent/ResourceAssignmentForm.html?id=1469305

Search | Va tech webmail

### Review Module 1

Click here to return to the syllabus.

bbpm1 | 06/07 / 07:43 | ATTACHMENTS

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Outline | Thumbnails | Notes | Search

1. Bias-Based Policing A Study for the Comm
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11. Slide 11
12. Bias-Based Policing A Study for the Comm
13. Bias-Based Policing A Study for the Comm
14. Slide 14
15. module 1

module1

Search

#### Review of Module 1

Please proceed through the following review as test questions will be taken from this section.

- What organizations entered into an agreement to conduct a study on biased-based policing?
- What was the purpose of the study?
- Bias-based policing includes practices by law enforcement officials that are only race related?
- What are three lessons that surfaced during this study?
- What did data from the study suggest?

articulate POWERED PRESENTATION

SLIDE 15 OF 15 | PLAYING | 00:06 / 01:43

4:14 PM 8/21/2012

Presentation Viewer | Cardinal Criminal Justice Academy - Mozilla Firefox

https://online.cardinalcja.org/lcms-1.0/presentationAssignment.html?paId=1469312

A 1 | Slide 1 of 2

*Cardinal*

## IA Assessment

- You must click on the link below to take the assessment. No in-service will be given until assessment has been complete.

Assessment

previous slide | [Link to External Site](#) | next slide

Return to Syllabus

4:17 PM 8/21/2012

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https://online.cardinalcja.org/lcms-1.0/presentationAssignment.html?paId=1469312

A 1 Slide 2 of 2

*Cardinal*

## EA Assessment

- You must click on the link below to take the assessment. No in-service will be given until assessment has been complete.

Assessment

previous slide      Link to External Site      return to syllabus  
Return to Syllabus

4:18 PM  
6/21/2012

The image shows a presentation slide titled "EA Assessment" displayed in a Mozilla Firefox browser window. The slide has a white background with a red horizontal line at the top. The word "Cardinal" is written in red cursive in the top left corner. The main title "EA Assessment" is in black. Below the title is a bullet point: "You must click on the link below to take the assessment. No in-service will be given until assessment has been complete." In the center of the slide is a large green rectangular button with the word "Assessment" in black text, and a green arrow pointing downwards from the button. At the bottom of the slide, there are three buttons: "previous slide" on the left, "Link to External Site" in the center (with "Return to Syllabus" written below it), and "return to syllabus" on the right. The browser window title bar shows "Presentation Viewer | Cardinal Criminal Justice Academy - Mozilla Firefox" and the address bar shows "https://online.cardinalcja.org/lcms-1.0/presentationAssignment.html?paId=1469312". The system tray at the bottom right shows the time "4:18 PM" and date "6/21/2012".