WORKPLACE ANTI-DISCRIMINATION TRAINING EFFECTIVENESS:
A META-ANALYTIC REVIEW

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DEDICATION

This is dedicated to my best friend and husband, Tony, who has always been my biggest supporter and helps me to believe I can accomplish anything. I am forever grateful to have him in my life. I also dedicate this to the memory of my Grandma, who always provided unconditional love and shaped me into the person I am. She would be so pleased that I finally finished this thesis.
ABSTRACT OF THE THESIS

Workplace Anti-Discrimination Training Effectiveness: A Meta-Analytic Review
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Master of Science in Psychology with a Concentration in Applied Psychology
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The prevalence of workplace discrimination is a serious and costly problem for organizations. Beyond the high costs of settling or defending legal cases, organizations also face less-visible costs associated with discrimination, such as decreased productivity and organizational withdrawal. To mitigate the negative effects of discrimination, organizations often conduct anti-discrimination training with the assumption that it will reduce the incidence of workplace discrimination. However, this assumption has not been tested across studies of anti-discrimination training effectiveness. The purpose of the study is to conduct a meta-analytic review of the effectiveness of workplace anti-discrimination training (operationalized as diversity awareness training and sexual harassment awareness training), as indicated by a variety of training outcome types. When there was sufficient variance to model, potential moderators were examined. A literature search yielded 38 studies that met the inclusion criteria. The total sample size for all the studies is 364,828 (M = 9,601). Each study was coded for a number of variables by two independent raters. A comparison of the training interventions versus control groups was conducted using standardized mean differences (Cohen’s d). The vast majority of ds across all training outcome types were positive, which indicates that training overall had the desired effects on training outcomes. Moderator analysis revealed that that sexual harassment awareness training has a larger effect on outcomes as compared to diversity awareness training, especially when looking at specific training outcomes. In the analysis of study design as a moderator, larger effect sizes were found for studies that had a pre-test/post-test design as compared to a training/control group, post-test only design. In addition, these results did not support a moderating effect of the research setting (lab versus field) on training outcomes. Although it appears that anti-discrimination training is heading in a positive direction, further research is needed to determine the specific factors that influence the effectiveness of training.
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CHAPTER 1

INTRODUCTION

The prevalence of workplace discrimination is a serious and costly problem for organizations. The U.S. Equal Employment Opportunity Commission (EEOC) reported over 88,000 charges of discrimination in the 2014 fiscal year where the two major types of discrimination claims were based on race (35%) and sex (29%). In 2014, the EEOC reported that these two types of claims cost organizations an estimated $181.4 million in settlements/resolution costs alone (not including the direct costs of litigation).

Discrimination in the workplace has also been demonstrated to lead to negative personal outcomes, which, in turn, can contribute to less-visible costs to an organization (e.g., increased turnover and decreased job satisfaction). In order to mitigate the high costs of workplace discrimination, organizations often conduct anti-discrimination training with the assumption that any training will reduce the incidence of discrimination (Esen, 2005; Magley, Grossman, & Kath, 2004; Wentling & Palma-Rivas, 1998).

The current study is a meta-analysis of the effectiveness of anti-discrimination training, which is operationalized as including both diversity and sexual harassment awareness training. I focus solely on these two major types of discrimination: racial and sexual discrimination. Note that the literature on racial discrimination typically uses the term discrimination, while the literature on sexual discrimination typically uses the term harassment. In the current study, I treat these terms as definitionally equivalent and, as a result, the terms will be used interchangeably. A review of discrimination outcomes, rationales for training, training outcomes, and training effectiveness studies will be discussed in the following sections.
NEGATIVE OUTCOMES OF DISCRIMINATION

Beyond the negative financial outcomes for organizations noted above (e.g., litigation, arbitration, settlement), workplace discrimination can often result in negative personal outcomes for the victim of discriminatory behavior as well. Experiences of racial discrimination have been demonstrated to be negatively related to mental health and well-being (Gee, 2008; Ong, Fuller-Rowell, & Burrow, 2009). Work-related outcomes of racial discrimination include increased work tension and decreased job satisfaction (Avery, McKay, & Wilson, 2008). Beyond these negative personal outcomes, Triana and García (2009) found employees’ perceptions of racial discrimination were negatively related to procedural justice perceptions. This could lead to a cascade of negative outcomes, as procedural justice have been demonstrated to be negatively related to organizational withdrawal and turnover (Colquitt, Conlon, Wesson, Porter, & Ng, 2001), both of which add to the hidden costs of racial discrimination for organizations.

There are a plethora of studies concerning the consequences of sexual harassment in the workplace, including negative work-related, physical, and mental health outcomes (e.g., Avina & O’Donohue, 2002; Chan, Chun Bun, Suk Yee, & Shu Fai, 2008; Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997; Glomb, Munson, Hulin, Bergman, & Drasgow, 1999; Willness, Steel, & Lee, 2007). Specifically, a meta-analysis by Willness and colleagues (2007) demonstrated that negative work-related outcomes could occur for those who experience workplace sexual harassment. These include decreased job satisfaction, lower organizational commitment, and increased organizational withdrawal. The physical and mental health consequences include a wide range of negative outcomes including: decreased psychological well-being (e.g., depression, decreased self-esteem, distress, anxiety), decreased life satisfaction, and symptoms of post-traumatic stress disorder (e.g., Avina & O’Donohue, 2002; Chan et al., 2008; Collinsworth, Fitzgerald, & Drasgow, 2009; Hoyer, 1994; Piotrkowski, 1998). These outcomes can lead to lower productivity on the job, which can result in withdrawal or dismissal from the organization (Avina & O’Donohue, 2002; Popovich, 1988).

Beyond the negative outcomes at the individual level, discrimination has also been associated with detrimental team-level outcomes. Although team-level outcomes of discrimination have not been studied in the racial discrimination literature, Glomb and
colleagues (1997) found that sexual harassment within a work group (termed “ambient sexual harassment”) can lead to adverse consequences on job satisfaction and psychological conditions for workgroup members who are not targeted by the harassing behavior. Moreover, Raver and Gelfand (2005) found ambient sexual hostility, defined as verbal or nonverbal harassment of a team member that is insulting and sexually explicit, to be negatively related to team cohesion and team financial performance. Taken together, the abovementioned personal and team-level outcomes of workplace discrimination can negatively affect the financial performance of organizations through costs associated with turnover, organizational dismissal, and decreased productivity.

**Prevalence of and Rationales for Anti-Discrimination Training**

Although not required by law, organizations often conduct diversity awareness training to reduce discrimination on the basis of race (Wentling & Palma-Rivas, 1998). A survey conducted by the Society for Human Resource Management reported that about 67% of respondents indicated their organizations had training on diversity (Esen, 2005). Organizations commonly use training sessions to instill knowledge and increase awareness of diversity issues, manage diversity, and improve the understanding and acceptance of a diverse workforce (Combs & Luthans, 2007; Cox, 1991). In addition, training commonly provides necessary skills for working in a diverse environment (Cox, 1991; Wentling & Palma-Rivas, 1998). Training is provided in hopes that it will lead to a more positive work environment (Combs & Luthans, 2007), which in turn, can lead to fewer cases of discrimination.

To prevent discrimination on the basis of sex, organizations typically conduct sexual harassment awareness training. In a nationally-representative survey conducted by Magley et al. (2004), sexual harassment awareness training was found to be conducted in 46% of the organizations surveyed overall, with this ratio increasing to over 65% for organizations greater than 1,000 employees. Furthermore, in California, Connecticut, and Maine, it is required by state law that supervisors of organizations with 50 or more employees undergo at least two hours of sexual harassment awareness training every two years (Kearns, 2005). A training program is expected to help employees and supervisors learn necessary skills to
prevent sexual harassment and maintain a more autonomous work group (Licata & Popovich, 1987).

Organizations often assume that if an employee attends anti-discrimination training, discrimination in the workplace will be reduced. Due to this assumption, training is typically conducted without a thorough evaluation to determine its effectiveness. The meta-analysis in the current study will examine the effectiveness of anti-discrimination training in the workplace. First, a review of the prevailing taxonomies of training outcomes will be summarized, which will set the stage for identifying the most appropriate outcomes of anti-discrimination training. Next, a review of the literature on anti-discrimination training effectiveness will be presented, along with a categorization of common training outcomes using Kirkpatrick’s (1959) and Kraiger, Ford, and Salas’ (1993) taxonomies of training outcomes. Following this review, potential moderators for effective anti-discrimination training will be identified.

**TRAINING OUTCOMES**

Two prevailing taxonomies of training effectiveness outcomes in the literature have been created by Kirkpatrick (1959) and Kraiger et al. (1993). The Kirkpatrick Four-Level Evaluation Model includes four levels of outcomes in determining the efficacy of training, which includes: reactions, learning, behavior, and results. The first level of outcomes consists of trainee reactions to the training. If reactions to training are positive (i.e., trainees enjoyed the training and/or found it useful), these reactions are expected to foster learning, which is the second-level outcome. Learning outcomes are measures of the extent to which the trainee learned the material from the training program. The third level includes whether the trainee transferred their learning to actual behavior on the job. The final level of evaluation is concerned with organizational results obtained from the training. From the organization’s perspective, this evaluation assesses whether training had a return on investment and is most often conceptualized in terms of financial benefits for the organization.

The Kraiger et al. (1993) model provides a taxonomy of learning as a multidimensional outcome of training. They propose that measures of cognitive, skill-based, and affective learning outcomes should be incorporated when considering training effectiveness. *Cognitive outcomes* include an increase in knowledge. For anti-discrimination
training, this can include knowledge regarding diversity, sexual harassment, or the organization’s policies about discrimination. *Affective outcomes* can be measured by changes in attitude and motivation related to the training topic, which in this case would be attitudes regarding diversity and sexual harassment. *Skill-based outcomes* are defined as the technical or motor skills developed through training. This outcome can be difficult to identify with regards to anti-discrimination training, as it may relate to skills necessary to *not* engage in discriminatory behaviors, but I will go into more detail about this in the next section. Training outcomes were identified as skill-based outcomes if they involved an element of practiced acts.

In the current study, I make a distinction between Kraiger et al. (1993) skill-based learning outcomes and Kirkpatrick’s (1959) behavior outcomes. Skill-based learning outcomes are those that are the result of practice during training, with a focus on gaining automaticity of those behaviors. Behavior outcomes include both actual behavior and behavioral intentions, with an emphasis on the transfer of learning to settings outside of the training itself. In a review of diversity education by Kulik and Roberson (2008), this distinction between skill-based learning outcomes and behavior outcomes is not made, and skill and behavioral outcomes are combined. I have chosen to make a distinction between these two outcomes to allow for greater specificity in determining training effectiveness.

Although it has been argued that Kirkpatrick’s taxonomy has a number of problematic assumptions (Alliger & Janak, 1989), it nonetheless continues to be a commonly used taxonomy in both research and practice. Therefore, the current meta-analysis will examine anti-discrimination training outcomes using both aforementioned taxonomies; Kirkpatrick’s (1959) learning outcome will be subdivided into Kraiger et al. (1993) proposed classification of learning outcomes: cognitive, affective, and skill-based (see Figure 1).

**REVIEW OF ANTI-DISCRIMINATION TRAINING OUTCOMES**

The literature regarding the effectiveness of anti-discrimination training is limited. In a thorough literature search of empirical studies evaluating the effectiveness of anti-discrimination training, only 38 studies were identified. Of the 38 studies, 10 examined trainee reactions, 15 examined cognitive outcomes, 20 examined affective outcomes, 2
Figure 1. The Kirkpatrick (1959) and Kraiger et al. (1993) taxonomies of training effectiveness outcomes. The lines branching from the learning box visually represents Kirkpatrick’s learning outcomes subdivided into Kraiger et al. (1993) classification of learning outcomes.

examined skill-based outcomes, 14 examined behavioral outcomes, and zero studies examined results. Notably, many of the studies examined more than one outcome.

Reactions

Reactions to training were examined in 10 of the studies. Overall, the types of reactions that were examined included: satisfaction with the training, perceived or expected utility of the training, perceived or expected increase of the trainees’ knowledge of either diversity or sexual harassment, and also evaluations of the trainers (Barak, 1994; Govern, 1998; Hanover & Cellar, 1998; Holladay, 2004; Kracht, 1999; Law, 1998; Newman, Jackson, & Baker, 2003; Rynes, 1995; Sanchez & Medkik, 2004; Wilkerson, 1999).
Learning: Cognitive

Of the 15 studies that examined cognitive outcomes, five were evaluating diversity awareness training and ten were evaluating sexual harassment awareness training. The types of cognitive outcomes included facts and principles related to diversity (Roberson, Kulik, & Pepper, 2009), knowledge of social perception biases (Sanchez & Medkik, 2004), definitions and factual information about sexual harassment (Perry, Kulik, & Schmidtke, 1998), knowledge of laws and policies regarding harassment (e.g., Beauvais, 1986; Bingham & Scherer, 2001; Maurizio & Rogers, 1992), and knowledge about what behaviors constitute harassment (e.g., Blakely, Blakely, & Moorman, 1998; Moyer & Nath, 1998; York, Barclay, & Zajack, 1997).

Learning: Affective

Most of the studies that examined affective outcomes measured participant’s attitudes towards either diversity or sexual harassment. Specifically, 12 studies measured diversity attitudes and 8 studies measured attitudes regarding sexual harassment. For example, Hanover and Celler (1998) measured the importance that participants placed on management-initiated diversity practices. Additionally, Combs and Luthans (2007) used the Diversity Self-Efficacy Questionnaire (DEQ) to assess one’s efficacy for diversity-related issues. Finally, one study by Bonate and Jessell (1996) measured participants’ sensitivity to the negative effects of sexual and nonsexual harassment.

Learning: Skill-Based

As discussed in the review by Kulik and Roberson (2008), skill-based outcomes do not receive much attention in anti-discrimination training evaluation studies. Two studies examined skill-based outcomes as defined in this study. Cornett-DeVito and McGlone (2000) found diversity awareness training was associated with improved self-reported emotional resilience, perceptual acuity, and personal autonomy skills among law enforcement officers. In addition, Bush and Ingram (2001) examined trainees’ pre- and post-test differences on self-ratings of cultural diversity skills following a simulation-based training.
Behavior

Fourteen studies examined the behavioral outcomes that trainees displayed following training. For example, Sanchez and Medkik (2004) measured differential treatment among trainees, which is defined as negative outcomes of selective and discriminatory treatment of others based on perceived cultural membership. Holladay (2004) measured the extent to which participants, who assumed a managerial role, relied on race and gender to make hiring decisions. Several researchers have measured trainee’s behavioral intentions to engage in diversity practices. (Combs & Luthans, 2007; Hanover, 1998; Law, 1998; Roberson, Kulik, & Pepper, 2001). Furthermore, Holladay (2004) measured the likelihood that trainees will transfer skills acquired through diversity awareness training. Barak (1994) had participants report any incidence of harassment they experienced one-year following sexual harassment awareness training. Perry and colleagues (1998) observed inappropriate touching behaviors in male participants following sexual harassment awareness training. Finally, Goldberg (2007) measured behavioral intentions for dealing with harassment or conflict.

Results

Not surprisingly, none of the studies examined organizations results obtained from the training, as this outcome is extremely difficult to assess. The most obvious monetary benefit would be the decreased litigation costs associated with workplace discrimination. However, discrimination lawsuits are typically a low base-rate phenomenon in organizations; therefore, it is difficult to correlate training to changes in litigation costs within an organization.

Review of Studies of the Effectiveness of Anti-Discrimination Training

Overall, most of the studies reported positive outcomes of anti-discrimination training. However, some reported no significant outcomes, and in a few studies, negative outcomes of anti-discrimination training were found. In the following section, I provide a narrative summary of the results of all 38 studies before moving to the quantitative review.

Within the diversity awareness training effectiveness literature, many of the studies demonstrated positive outcomes. For example, Combs and Luthans (2007) demonstrated that diversity awareness training increased trainees’ diversity self-efficacy. Hanover and Cellar
(1998) found that those who participated in a diversity workshop rated management practices for diversity initiatives as more important and indicated they were more likely to engage in recommended diversity practices as compared to those who did not attend the workshop. Holladay and Quinones (2008) found diversity awareness training to be negatively related to attitudes towards diversity training initiatives and positively related to cognitive learning and behavior outcomes. Lastly, King, Dawson, Kravitz, and Gulick (2009) found diversity awareness training led to a decrease in reports of workplace discrimination and an increase in employee satisfaction.

Within the sexual harassment awareness training effectiveness literature, several studies reported significant improvement in trainees’ ability to correctly identify harassing behaviors and gauging the severity of sexual harassment (Antecol & Cobb Clark, 2003; Blakely et al., 1998; Frisbie, 2002; Kearney, Rochlen, & King, 2004; Wilkerson, 1999; York et al., 1997). For example, two studies demonstrated a significant increase in sensitivity towards sexual harassment issues (Beauvais, 1986; Bonate & Jessell, 1996) and four studies demonstrated improved knowledge about sexual harassment following training (Blaxall, Parsonson, & Robertson, 1993; Maurizio & Rogers, 1992; Perry et al., 1998; Whitlock, 2002).

Despite the fact that most studies found anti-discrimination to be effective, there were some that reported mixed or even negative results. In a study of diversity awareness training effectiveness, Sanchez and Medkik (2004) found that while reactions to training were positive, target behavioral outcomes were not. More specifically, they found that for those who attended the training program, differential treatment towards non-white coworkers increased. Additionally, in the Kearney and colleagues (2004) study of sexual harassment awareness training, male trainees showed an improvement in correctly identifying harassing behaviors following training; however, they did not demonstrate a significant decrease in their tolerance of harassment. Similarly, in a study by Moyer and Nath (1998), it was demonstrated in their first experiment that trainees increased in their likelihood to identify harassing behaviors; however, their ability to correctly identify harassment did not improve. In their second experiment, training was shown to improve the perceptual expertise for men but not for women, which is contrary to results found in previous studies.
More surprisingly, two studies demonstrated negative outcomes of training, which has been termed a “backlash” effect. As opposed to the previously mentioned findings of non-significant training outcomes, these two studies demonstrated that training could actually lead to poorer outcomes. Specifically, Bingham and Scherer (2001) found that men experienced adverse reactions to the training they received. Men in this study reported significantly less desire to report incidence of sexual harassment, were more likely to blame the victim, and were less likely to perceive certain types of sexual harassment. Additionally, Robb and Doverspike (2001) found that men who were higher on a likelihood to harass scale reported more negative attitudes regarding sexual harassment following training. These findings indicate that although organizations assume that anti-discrimination training is effective, trainees could potentially be worse off due to the training itself.

These research findings strongly suggest that anti-discrimination training programs must be evaluated in order to understand the boundary conditions under which they are most effective. Simply offering training to employees does not guarantee that trainees will gain from the experience; on the contrary, some research indicates training may be harmful. Furthermore, workplace training is expensive; not only does it cost the company to develop and administer the training, but there is also the cost of the employees’ time to participate in the training during work hours. Therefore it is vital that organizations evaluate training outcomes to determine whether the training is worth the investment.

**Present Meta-Analysis**

The current meta-analysis examines the effectiveness of workplace anti-discrimination training, as indicated by a variety of training outcome types. When there was sufficient variance to model, potential moderators were examined. The moderators that were considered included both substantive and methodological moderators. One substantive moderator considered was trainee group gender mix (all males, all females, or mixed). Because some studies have reported differential effects of training outcomes by trainee group gender mix (e.g., Antecol & Cobb Clark, 2003; Bingham & Scherer, 2001), it was included as a possible moderator of training effectiveness. Based on previous studies, it would be expected that training with a greater female ratio would be more effective than with those with a greater male ratio or mixed ratio, particularly for cognitive and affective outcomes.
(Bingham & Scherer, 2001; Blakely et al., 1998; Robb & Doverspike, 2001). It should be noted that group gender mix will apply only to sexual harassment awareness training studies, because group racial mix is typically not divided in a way to allow for a similar comparison for diversity awareness training studies.

Another substantive moderator that was considered is training delivery method: video, lecture, computer-based, mixed, or other. In a meta-analysis of general workplace training effectiveness, Arthur, Bennett, Edens, and Bell (2003) found that training effectiveness varied as a function of the training delivery method, with overall medium to large effect sizes for lecture-based training. Finally, the focus of the anti-discrimination training (race or gender) could also serve as a substantive moderating variable. Due to a greater number of diversity awareness training studies with demonstrated positive results, it would appear that diversity awareness training (i.e., focus on race) would be more effective than sexual harassment awareness training (i.e., focus on gender).

Two methodological moderators that were included are research setting (laboratory versus field studies), and sample type (student versus employee samples). These moderators were combined as they are related, as laboratory studies typically use student samples, whereas field studies typically use employee samples. It is possible that student participants in laboratory settings would not take training as seriously as employee participants in field settings, thus effect sizes may be lower for with student samples. Conversely, it is possible that because the average college student is somewhat higher in cognitive ability than the average working population and therefore student samples could have higher effect sizes when compared to employee samples.

Another included methodological moderator is the type of study design (pre/post testing, only post testing, and pre/post/follow-up testing). It has been argued by Solomon (1949) that the presence of a pre-test can interact with the training process and affect the effectiveness of the training. He argues that a pre-test can change trainee’s attitudes towards the training, causing them to pay more attention to certain aspects of the training following a pre-test. In addition, follow-up evaluations could also affect training outcomes. Lastly, the time lag between training and evaluation could be another methodological moderator. It is expected that as the time lag increases, the strength of the outcomes may decrease. For
example, Fishbein and Ajzen (1975) argue that as the time lag increases, the correlation between intentions and behavior gets weaker.
CHAPTER 2

METHOD

IDENTIFYING STUDIES

First, a computer-based search was performed to identify possible studies. Separate database searches for sexual harassment awareness training and diversity awareness training were performed. Studies were identified using a combination of the search terms, “sexual harassment”, “diversity”, “training”, and “effectiveness”. The following databases were utilized: PsycINFO, ABI Inform, Education Resources Information Center (ERIC), Business Source Premier, EconLit, and Web of Science. In addition, a call for unpublished manuscripts from the listserv for the Gender and Diversity in Organizations division of the Academy of Management was distributed. Each study identified was examined to determine if it met the basic inclusion criteria. Finally, the reference section for each article included in the meta-analysis was read to identify any additional studies to be included.

INCLUSION CRITERIA

For studies to be included in the meta-analysis, each needed to meet three critical inclusion criteria. Primarily, each study needed to investigate anti-discrimination (sexual harassment or diversity) training effectiveness. Additionally, each study had to be a quantitative empirical study, as effect sizes were to be aggregated to determine training effectiveness. Finally, the sample must only include studies with a focus on workplace discrimination. The Civil Rights Act of 1964, as amended in 1991, differentiates workplace discrimination (Title VII) and school discrimination (Title IX). Therefore, studies that focus on the effectiveness of anti-discrimination training in a school setting were excluded from the study.

This literature search yielded 38 studies that met the inclusion criteria. Of those studies, 31 were published journals articles, 3 were unpublished papers presented at
conferences, and 4 were dissertations. The total sample size for all the studies is 364,828. One study by King and colleagues (2009) has a sample of 337,452 - excluding this extraordinarily large sample, the average sample size is 740. The publication years ranged from 1986 to 2009, with an average publication year of 2000.

**CODING**

A number of variables were coded for the present meta-analysis including, focus of anti-discrimination training (race or gender), sample characteristics, research design characteristics, and dependent measures of training outcomes. Specifically, sample characteristics were coded for: (a) total sample size, (b) group gender mix (all males, all females, or mixed), and (c) sample type (employee, student, or mixed). Research design characteristics were coded for: (a) training group sample size, (b) control group sample size, (c) research setting (lab or field), (d) type of training design (pre/post testing, post testing only, or pre/post/follow-up testing), (e) type of training delivery method (video, lecture, computer-based, mixed, or other), and (f) time lag between training and evaluation (see Appendix A). Lastly, training outcomes were coded based on Kirpatrick’s (1959) and Kraiger et al. (1993) taxonomies of training effectiveness outcomes including: reactions, learning: cognitive, learning: affective, learning: skill-based, behavior, and results (see Appendix B). Each of the 38 primary articles was coded independently by the first author and a trained undergraduate research assistant. To determine inter-rater reliability between the two coders, Cohen’s kappa was utilized for categorical variables and the intraclass correlation was utilized for continuous variables. The agreement for categorical variables was high with an agreement of 94.9% and a Cohen’s kappa value of 0.642. For continuous variables, the average intra-class correlation coefficient (ICC) was .843, which indicated high agreement as well. Each of the discrepancies between coders was identified once coding was complete. The two coders reviewed the studies with the coding discrepancies together, and had thorough discussions regarding how they coded each variable. Once reviewed, the coders came to agreement on each of the coding discrepancies.
**ANALYSES (AVERAGE EFFECT & MODERATORS)**

To determine the overall effectiveness of anti-discrimination training, a comparison of the training interventions treatment versus control groups were conducted using standardized mean differences (Cohen’s $d$). In addition, separate $d$s were calculated to examine differences in effect sizes between the types of training outcomes assessed. All relevant statistical data not reported as standardized mean differences were transformed accordingly. For this reason, the means and standard deviations for each group must be made available for analyses. Effect sizes were aggregated using a random effects model (Hedges & Vevea, 1998). Moderation analyses were conducted using weighted multiple regression to determine if (a) trainee group gender mix, (b) training delivery method, (c) type of training outcomes assessed, (d) research setting, (e) sample type, (f) type of study design, and (g) time lag between training and evaluation, moderate the effectiveness of anti-discrimination training.
CHAPTER 3

RESULTS

TRAINING OUTCOME TYPES

The primary goal of the current meta-analysis was to examine the overall effectiveness of workplace anti-discrimination training as indicated by a variety of training outcome types. The histogram presented in Figure 2 displays the distribution of the standardized mean differences (Cohen’s $d$) found in this meta-analysis. The vast majority of $ds$ across all training outcome types were positive, which indicates that training overall had the desired effects on training outcomes. Table 1 displays the results of the overall relationship between training outcome types and anti-discrimination training effectiveness. The sample-weighted mean effect sizes, categorized by training outcome types, ranged from small ($d = 0.081 – 0.388$) to medium ($d = 0.513 – 0.539$; Cohen, 1992).

A small number of data points were obtained for the reaction outcome type ($k = 2$). Although many studies reported a reaction outcome, studies that had a pre/post study design only reported post-training scores, and those that had a training/control study design only reported trainee reaction scores. Thus, those scores could not be included in this current meta-analysis as it did not measure a change in reactions due to training; rather it only examined the trainee’s reaction to the training.

The largest effect was found for learning-cognitive and learning-skill-based outcomes ($d = 0.65$ and $0.66$, respectively). The learning-skill-based outcome also had a small number of data points ($k = 3$). As reviewed by Kulik and Roberson (2008), skill-based outcomes are not usually measured in training evaluation studies. This was probably due to the difficult nature of measuring skills resulting from anti-discrimination training through the use of a survey. The learning-skill-based outcomes examined items such as: communication, conflict management, and emotional resilience, which are difficult to capture via survey questions. The smallest effect sizes were found for learning-affective and behavior outcomes ($d = 0.36$...
Figure 2. Histogram of the distribution of the 41 ds of the effectiveness of anti-discrimination training included in the meta-analysis.

and 0.20, respectively). The low effect size for learning-affective outcome is not surprising because, although the majority of studies found a positive effect, the Robb and Doverspike (2001) reported a negative effect size for this outcome, bringing the average down. The low effect size for behavior was probably because behavior is difficult to change.

MODERATORS

Although a number of potential moderators were hypothesized, many could not be analyzed due to the lack of information in the sampled studies. For example, the moderator of group gender mix (all males, all females, or mixed) could not be examined, as a majority of the studies did not report a breakdown of trainee genders. Training delivery method also could not be used because many studies did not report the training delivery type. In addition, not enough studies reported the time lag between training and evaluation, and consequently it could not be included in the moderator analysis.
Table 1. Meta-Analysis Results of the Relationship Between Training Outcome and the Effectiveness of Anti-Discrimination Training

<table>
<thead>
<tr>
<th>Training outcome</th>
<th>No. of studies (k)</th>
<th>No. of participants (N)</th>
<th>Sample-weighted $M_d$</th>
<th>Sample-weighted variance of $d$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reaction</td>
<td>2</td>
<td>70</td>
<td>0.4914</td>
<td>0.0086</td>
<td>0.202 - 0.5385</td>
</tr>
<tr>
<td>Learning – Cognitive</td>
<td>11</td>
<td>2434</td>
<td>0.6450</td>
<td>0.0028</td>
<td>0.0667 - 1.4118</td>
</tr>
<tr>
<td>Learning – Affective</td>
<td>14</td>
<td>9351</td>
<td>0.3637</td>
<td>0.0014</td>
<td>0.075 - 0.9803</td>
</tr>
<tr>
<td>Learning – Skill-Based</td>
<td>3</td>
<td>762</td>
<td>0.6587</td>
<td>0.0183</td>
<td>0.48 - 1.102</td>
</tr>
<tr>
<td>Behavior</td>
<td>10</td>
<td>2216</td>
<td>0.2000</td>
<td>0.0008</td>
<td>-0.2192 - 1.0558</td>
</tr>
</tbody>
</table>

Split by Training Type

<table>
<thead>
<tr>
<th>Training outcome</th>
<th>No. of studies (k)</th>
<th>No. of participants (N)</th>
<th>Sample-weighted $M_d$</th>
<th>Sample-weighted variance of $d$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning – Cognitive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td>8</td>
<td>2203</td>
<td>0.6591</td>
<td>0.0394</td>
<td>0.2698 - 1.0484</td>
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<tr>
<td>Sexual harassment</td>
<td>3</td>
<td>137</td>
<td>0.7530</td>
<td>0.1208</td>
<td>0.0719 - 1.4341</td>
</tr>
<tr>
<td>Learning – Affective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td>9</td>
<td>8679</td>
<td>0.3687</td>
<td>0.0102</td>
<td>0.1703 - 0.5671</td>
</tr>
<tr>
<td>Sexual harassment</td>
<td>5</td>
<td>596</td>
<td>0.2102</td>
<td>0.0214</td>
<td>-0.0763 - 0.4967</td>
</tr>
<tr>
<td>Learning – Skill-Based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual harassment</td>
<td>3</td>
<td>727</td>
<td>0.7180</td>
<td>0.0441</td>
<td>0.3064 - 1.1295</td>
</tr>
<tr>
<td>Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diversity</td>
<td>6</td>
<td>1552</td>
<td>0.2346</td>
<td>0.0142</td>
<td>0.0008 - 0.4683</td>
</tr>
<tr>
<td>Sexual harassment</td>
<td>4</td>
<td>531</td>
<td>0.5149</td>
<td>0.0254</td>
<td>0.2023 - 0.8275</td>
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Split by Research Setting

<table>
<thead>
<tr>
<th>Training outcome</th>
<th>No. of studies (k)</th>
<th>No. of participants (N)</th>
<th>Sample-weighted $M_d$</th>
<th>Sample-weighted variance of $d$</th>
<th>95% CI</th>
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</thead>
<tbody>
<tr>
<td>Learning – Cognitive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>8</td>
<td>2223</td>
<td>0.6900</td>
<td>0.0407</td>
<td>0.2948 - 1.0853</td>
</tr>
<tr>
<td>Lab</td>
<td>3</td>
<td>117</td>
<td>0.6588</td>
<td>0.1199</td>
<td>-0.0200 - 1.3375</td>
</tr>
<tr>
<td>Learning – Affective</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>11</td>
<td>9074</td>
<td>0.3045</td>
<td>0.0082</td>
<td>0.1273 - 0.4817</td>
</tr>
<tr>
<td>Lab</td>
<td>3</td>
<td>201</td>
<td>0.3717</td>
<td>0.0360</td>
<td>0.0000 - 0.7434</td>
</tr>
<tr>
<td>Learning – Skill-Based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>2</td>
<td>551</td>
<td>0.7652</td>
<td>0.0961</td>
<td>0.1578 - 1.3727</td>
</tr>
<tr>
<td>Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>6</td>
<td>1703</td>
<td>0.2174</td>
<td>0.0234</td>
<td>-0.0825 - 0.5173</td>
</tr>
<tr>
<td>Lab</td>
<td>4</td>
<td>380</td>
<td>0.5801</td>
<td>0.0404</td>
<td>0.1863 - 0.9739</td>
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Split by Study Design

<table>
<thead>
<tr>
<th>Training outcome</th>
<th>No. of studies (k)</th>
<th>No. of participants (N)</th>
<th>Sample-weighted $M_d$</th>
<th>Sample-weighted variance of $d$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning – Cognitive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/post</td>
<td>5</td>
<td>301</td>
<td>0.8952</td>
<td>0.0698</td>
<td>0.3772 - 1.4131</td>
</tr>
<tr>
<td>Training/control</td>
<td>6</td>
<td>2039</td>
<td>0.4970</td>
<td>0.0605</td>
<td>0.0148 - 0.9791</td>
</tr>
<tr>
<td>Learning – Affective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/post</td>
<td>5</td>
<td>301</td>
<td>0.3591</td>
<td>0.0198</td>
<td>0.0833 - 0.6349</td>
</tr>
<tr>
<td>Training/control</td>
<td>9</td>
<td>8974</td>
<td>0.2941</td>
<td>0.0112</td>
<td>0.0865 - 0.5017</td>
</tr>
<tr>
<td>Learning – Skill-Based</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training/control</td>
<td>2</td>
<td>692</td>
<td>0.5054</td>
<td>0.0272</td>
<td>0.1824 - 0.8285</td>
</tr>
<tr>
<td>Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre/post</td>
<td>3</td>
<td>242</td>
<td>0.3407</td>
<td>0.0394</td>
<td>-0.0482 - 0.7296</td>
</tr>
<tr>
<td>Training/control</td>
<td>7</td>
<td>1841</td>
<td>0.3491</td>
<td>0.0187</td>
<td>0.0809 - 0.6173</td>
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</tbody>
</table>
For the moderators where information was available and there was sufficient variability, the moderator analyses were conducted using the Comprehensive Meta-Analysis (Version 2) software. All moderators were computed using a random-effects model and grouped by the moderating variable. Due to the low number of studies, not all training evaluation outcomes were used in the moderator analyses. For the three moderator variables that were examined (training type, research setting, and study design), the following training evaluation outcomes were used: learning-cognitive, learning-affective, learning-skill-based and behavior (Table 1).

**Training Type**

The training type moderator (sexual harassment vs. diversity awareness training) examined whether overall training effectiveness varies depending on the type of training used in the study. For all outcomes except learning-affective, sexual harassment awareness training had a slightly larger effect compared to diversity awareness training. The largest effect size difference was found for behavior ($d = .24, d = 0.52$).

**Research Setting**

The moderating variables, research setting (lab vs. field) and sample type (student vs. employee), were combined as the variables were completely confounded; all students were in a lab setting, and all employees were in a field setting. This variable intended to examine whether or not the research setting had an impact on the overall effectiveness of anti-discrimination training. The largest effect size difference was found for the training outcome type of behavior with a higher effect found for the lab setting ($d = 0.22$ and $d = 0.58$). For all other training outcome types, the effect size difference was minimal.

**Study Design**

Lastly, the possible effect of study design (pre/post vs. treatment/control) was examined to see if it had an impact on overall training effectiveness. The largest effect size difference was found for learning – cognitive with a higher effect found for the pre/post study design ($d = 0.90, d = 0.50$). There was also a slightly larger effect size for pre/post for learning – affective ($d = 0.36, d = 0.2941$).
CHAPTER 4

DISCUSSION

The purpose of the study was to conduct a meta-analytic review of the effectiveness of workplace anti-discrimination training (operationalized as diversity awareness training and sexual harassment awareness training), as indicated by a variety of training outcome types. Overall, the relationship between training outcome type and anti-discrimination training effectiveness is positive. Depending on training outcome types, the effect sizes ranged from small to medium (Cohen, 1992). Given the prevalence of anti-discrimination training in organizations, this is an encouraging finding.

Additionally, the moderator analyses provided a few notable results. For one, it appears that sexual harassment awareness training has a larger effect on outcomes as compared to diversity awareness training, especially when looking at behavior outcomes. This difference could be due to the emphasis that sexual harassment awareness training puts on behavior and actions. In particular, with compliance-driven sexual harassment awareness training, participants learn which behaviors are against the law. Thus, it could be reasoned that post-training, they will be more likely to modify their behavior or their intended behavior than those who were in diversity awareness training. It would be interesting if diversity awareness training also included more behavioral elements to see if it impacts post-training outcomes.

When reviewing research setting as a moderator, it does not appear that there is a significant difference between lab settings and field settings. However, the largest effect size difference was found for behavior: research completed in a lab setting (versus field setting) has a larger effect on behavior outcomes. This difference could be because in general, lab settings were comprised of undergraduate students, who typically do not have much experience in the workplace. Because behavior outcomes were measured by intended actions, not actual behavior, and because harassment is typically a low base rate
phenomenon, participants needed to speculate as to what behaviors they would perform. These included questions such as likelihood of formal reporting, confronting the perpetrator, seeking transfer or quitting, seeking legal counsel, and conflict avoidance, following a discriminatory event. It could be argued, if the participants were not currently in a workplace setting, it would be difficult for them to judge how they would respond in the aforementioned situations. Conceivably, it could be easier for students, who typically do not have full-time jobs, to assume that one would quit or seek legal counsel, because students may not have many responsibilities or given much thought about the possible negative outcomes that can accompany these decisions. It would be interesting to study this further to determine if there are significant differences between employee and student samples.

When looking at study design as a moderator, overall, there were larger effect sizes found for studies that had a pre-test/post-test design compared to a training/control design. The biggest effect size difference was found for the learning-cognitive outcome. This finding is not surprising, as participants will more likely pay closer attention to the portions of training that relates to the survey questions given pre-training. This is in line with Solomon’s (1949) argument that the presence of a pre-test can interact with the training process and impact the effectiveness of the training. A pre-test can affect a participant’s attitude towards the training. Given that this current study found a positive effect of a pre-test/post-test design, this could suggest an importance for organizations to conduct a pre-test for anti-discrimination training.

**LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

This study was limited to studies that investigated discrimination in the workplace that included quantitative data; thus, it was difficult to find many studies that could be included for analysis. Because there were only 24 studies that met eligibility criteria, several variables could not be used for analysis. First, no studies reported the training outcome of results. Although this is a difficult outcome to measure, it is the most important when determining whether or not training is worth the organization’s investment. Secondly, while a few studies reported the learning-affective outcome, there were not enough to complete a moderator analysis.
In addition, because many studies did not provide details regarding factors involved in the training interventions, three of the hypothesized moderators could not be analyzed: gender ratio mix, training delivery method and time lag between training and evaluation. Each of these moderators could provide deeper insight and organizational implications for training effectiveness. For example, if it were discovered that anti-discrimination with a mixed gender ratio of trainees is more effective when compared to an all-male or an all-female group, this would be something that organizations could easily accommodate. As demonstrated in the study by Robb and Doverspike (2001), negative training effects were found for sexual harassment awareness training with all male participants, so perhaps a mixed gender group would be beneficial. Future studies should perhaps test this by comparing an all-male, all-female, and mixed gender groups. This finding can have a major impact on organizations, as it would be fairly simple to ensure that trainings included both males and females if it was found that a mixed gender group leads to a more effective training outcome. Additionally, studying the training delivery method is also important given the increase in e-learning and other non-traditional classroom training. If training delivery method serves as a moderating variable, organizations can select the method that would be most effective in positively impacting their employees.

Practitioners should continue to evaluate their training to determine its effectiveness as it would start to bridge the gap between research and practice. As with this meta-analysis, studies should measure multiple levels of evaluation outcomes to gain a better understanding of what aspects of training are truly effective and what can be improved upon. In this study, a wide range of possible training outcomes as well as possible moderating variables were measured to capture multiple levels of training effectiveness. Perhaps the proposed combination of Kirkpatrick’s (1959) and Kraiger et al. (1993) taxonomies of training effectiveness outcomes can serve as a model for evaluation for anti-discrimination training. Furthermore, future research should investigate additional factors that could influence training such as the skill of the trainer, content and context of the actual training, and organizational support. These factors could not be included in this study due to lack of reporting information, but they would be helpful to piece together a better understanding of what makes anti-harassment training effective.
CONCLUSION

This study used meta-analytic procedures to measure the effectiveness of anti-discrimination training in the workplace. In addition, variables were identified that could moderate the relationship between training outcomes and training effectiveness. The results suggest that overall, anti-discrimination training is effective. Further, it appears that effectiveness is higher for sexual harassment awareness training (compared to diversity awareness training), lab settings (compared to field settings), and training with a pre/post design (compared to a treatment/control design). Although it can be suggested that anti-discrimination training in the workplace seems to be heading in a positive direction, further research in this area is needed to determine what factors influence the effectiveness of training. It is not enough for organizations to assume that if anti-discrimination training is provided to an employee it will be effective. As previous studies have demonstrated, negative outcomes can occur, which can lead to decreased productivity and organizational withdrawal. Furthermore, discrimination in the workplace can lead to costly legal fees for an organization. Given that most medium and large companies conduct some type of anti-discrimination training, and in a few states sexual harassment awareness training is mandated by state law, there needs to be an emphasis on ensuring the training is actually worth the company’s resources and efforts. This study serves as a starting point in examining the current state of anti-discrimination training effectiveness, but more research is needed to determine the factors that make the training effective. It is the hope that researchers and practitioners continue to study this topic to help ensure successful anti-discrimination training initiatives in organizations.
REFERENCES


## APPENDIX A

### CODING SHEET: PAGE 1

**Coding Sheet**  
Anti-Discrimination Training Effectiveness Meta-Analysis  
For Heather Yamashita’s Master’s Thesis

Reference information:

### Focus of anti-discrimination training

- [ ] Race (diversity training)  
- [ ] Gender (sexual harassment training)

### Publication type:

- [ ] journal article  
- [ ] book  
- [ ] book chapter  
- [ ] conference paper  
- [ ] dissertation  
- [ ] unpublished study  
- [ ] other

### Sample characteristics

**Total sample size:**
- [ ] all males  
- [ ] all females  
- [ ] mixed

**Gender ratio:**
- [ ] employee  
- [ ] student  
- [ ] mixed

**Sample type:**
- [ ] employee  
- [ ] student  
- [ ] mixed

### Research design characteristics

**Training group sample size:**

**Control group sample size:**

**Research setting:**
- [ ] laboratory  
- [ ] field  
- [ ] pre/post  
- [ ] post only  
- [ ] pre/post/follow-up

**Type of study design:**
- [ ] video  
- [ ] lecture  
- [ ] comp-based  
- [ ] mix  
- [ ] other, specify

**Type of training delivery method:**

**Length of training:**

**Time lag between training and evaluation:**
## APPENDIX B

### CODING SHEET: PAGE 2

**Dependent Measures of Training Outcomes**

### Reactions

Type of data effect size is based on:

- [ ] means/SD
- [ ] t-value
- [ ] f-value
- [ ] chi-square
- [ ] frequencies
- [ ] p-value
- [ ] other

<table>
<thead>
<tr>
<th>Intervention group mean/standard deviation:</th>
<th>Effect size:</th>
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</thead>
<tbody>
<tr>
<td>Control group mean/standard deviation:</td>
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</tr>
</tbody>
</table>

Page number effect size is located: ________

### Learning – cognitive

Type of data effect size is based on:

- [ ] means/SD
- [ ] t-value
- [ ] f-value
- [ ] chi-square
- [ ] frequencies
- [ ] p-value
- [ ] other

<table>
<thead>
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<th>Effect size:</th>
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<tbody>
<tr>
<td>Control group mean/standard deviation:</td>
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</tbody>
</table>

Page number effect size is located: ________

### Learning – affective

Type of data effect size is based on:

- [ ] means/SD
- [ ] t-value
- [ ] f-value
- [ ] chi-square
- [ ] frequencies
- [ ] p-value
- [ ] other

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<tbody>
<tr>
<td>Control group mean/standard deviation:</td>
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Page number effect size is located: ________

### Learning – skill-based

Type of data effect size is based on:

- [ ] means/SD
- [ ] t-value
- [ ] f-value
- [ ] chi-square
- [ ] frequencies
- [ ] p-value
- [ ] other

<table>
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<th>Effect size:</th>
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</thead>
<tbody>
<tr>
<td>Control group mean/standard deviation:</td>
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</tr>
</tbody>
</table>

Page number effect size is located: ________

### Behavior

Type of data effect size is based on:

- [ ] means/SD
- [ ] t-value
- [ ] f-value
- [ ] chi-square
- [ ] frequencies
- [ ] p-value
- [ ] other

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Page number effect size is located: ________

### Results

Type of data effect size is based on:

- [ ] means/SD
- [ ] t-value
- [ ] f-value
- [ ] chi-square
- [ ] frequencies
- [ ] p-value
- [ ] other

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