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The Effects of a Diversity Learning Experience on Positive and Negative Diversity Perceptions

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Abstract Using a pretest-posttest research paradigm, we administered the *Reaction-To-Diversity Inventory* to students enrolled in a workplace diversity course at a regional Midwestern university. Our results show that the diversity experience produced an increase in the number of positive *and* negative perceptions students associated with workplace diversity. Gender also played a significant role in determining diversity perceptions. We discuss the implications of our findings for the design, implementation, and evaluation of diversity learning experiences in academic and corporate settings.

Keywords Diversity · Training · Evaluation · Intervention · Assessment · Perception

One of the central challenges for 21st century businesses is to effectively manage an increasingly diverse workforce (Gandz 2001; Minehan 2004). Research conducted by the U.S. Census Bureau (2004) projects a major shift in the demographic profile of the U.S. population, with the percentage of Hispanic, African American, and Asian American citizens growing from 31% in 2000 to 50% by 2050. Accompanying this trend is a growing public awareness of the important role that diversity learning experiences will play in reaping the economic and social benefits of an increasingly diverse workforce. Results from a national opinion poll sponsored by the Ford Foundation show 91% of the respondents agreeing that "The global economy makes it more important than ever for all of us to understand people who are different from ourselves," and 82% believing that "The changing characteristics of America's population make diversity education necessary" (National Survey of Voters 1998, pp. 2, 4).

The good news is that a growing number of companies and colleges are responding to this challenge by incorporating diversity learning requirements into their institutional practices. Figures compiled from the most recent survey by the Association of American Colleges and Universities (2000) show that the percentage of institutions with a diversity learning requirement in place or in development has grown from 15% in 1992 to 62% in 2000. Findings from the 2005 survey of business organizations by the Society of Human Resource Management (SHRM) reveal a similar level of involvement, with 67% of firms reporting some form of training on diversity issues (Esen 2005). Further evidence for a growing interest in diversity learning is found in the wealth of articles and books providing abundant advice on understanding and managing diversity (e.g., Carrell et al. 2006; Cox 2001; Hubbard 2004; Kossek et al. 2003; McCuiston and Wooldridge 2004; Miller and Katz 2002; Plummer 2003; Roberson et al. 2003; Stockdale and Crosby 2004; Thomas 2004; Thomas et al. 2002).

Despite an increased interest in diversity education, the bad news is that far less attention has been paid to measuring the effects of diversity learning experiences on perceptions and behavior (Comer and Soliman 1996; Hansen 2003; Probst 2003). According to the 2005 SHRM survey, while 67% of firms provide diversity training, only 38% take the time to measure the impact of their diversity efforts (Esen 2005). The news is worse at the post-secondary level, with one study reporting that none of the colleges and universities providing

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diversity workshops reported evaluating the effects of these workshops (McCauley et al. 2000). These findings reflect a broader set of issues associated with training evaluation in general. Training evaluation often is viewed as a costly, difficult, and time consuming problem, and the prospects of developing pre- and post-training assessments based on rigorous statistical analyses can be daunting (Harrell 2001; Martineau and Preskill 2002). These findings beg some important questions for practitioners and researchers alike. How do administrators and teachers know that the time and effort spent on courses, seminars, and other forms of diversity education have made an impact on participants' perceptions of workplace diversity? How do organizational leaders know their training dollars were well spent?

Our goal in this study is to measure the effects of a diversity learning experience on a range of diversity perceptions by applying an instrument before and after the experience. By so doing, we hope to demonstrate how a concise and easily administered inventory can be used to gauge the effects of a learning experience on participants' perceptions of workplace diversity. We begin this article with a brief overview of existing approaches to measuring these effects. Subsequently, we derive a set of four testable hypotheses. Comparing the pretest and posttest scores will provide us with valuable information on how the diversity learning experience has impacted participants' diversity perceptions. Finally, we conclude by reviewing key implications of our study for measuring diversity learning impacts in business and academic settings.

Effects of a Diversity Learning Experience on Perceptions

Learning to manage a diverse workforce involves more than a heightened awareness, acceptance, and tolerance of those individuals who are different from us. Recent research, drawing on decades of prior studies, has underscored the importance of providing students with a more realistic preview that covers both positive *and* negative aspects of diversity (Carrell et al. 2006; Mannix and Neale 2005; McMillan-Capehart 2005; van Knippenberg et al. 2004). On the positive side, diversity has been linked to increased productivity (Richard 2000), improved problem-solving and decision-making (Carrell et al. 2006; Cox and Blake 1991; Damon 1991; Nemeth et al. 1992), enhanced creativity and innovation through considering divergent viewpoints (Carrell and Mann 1995; McLeod et al. 1996; Nemeth and Kwan 1987; Nemeth and Wachtler 1983), a heightened ability to tap diverse markets through leveraging the knowledge and skills of diverse employees (Carrell et al. 2006; Cox and Blake 1991; Ricaud 2006), and positive impacts on the company's profitability (Richard 2000).

On the negative side, diversity has been associated with undesirable personal and *interpersonal* outcomes such as decreased job satisfaction (Milliken and Martins 1996; Williams and O'Reilly 1998), decreased commitment to the organization (Tsui et al. 1992), heightened interpersonal conflict (Carrell and Mann 1995; Chatman et al. 1998; Pelled et al. 1999), increased competition for pay, promotions and other organizational rewards, resulting in heightened rivalry between diverse groups within the firm (Brief et al. 2005), increased social divisiveness, resulting in low social cohesion, a more difficult team process, and decreased group performance (Jackson et al. 2003; Jehn et al. 1999; Kochan et al. 2003; Watson et al. 1993). Workplace diversity also has been linked to negative *organizational* outcomes such as: increased absenteeism (Carrell et al. 2006; Tsui et al. 1992), higher turnover rates (Carrell and Mann 1995; Jackson 1992), increased expenses through higher training costs (Carrell et al. 2006), and backlash toward affirmative action programs and diversity initiatives (Galen and Palmer 1994; Kidder et al. 2004; Kravitz and Klineberg 2000; Mobley and Payne 1992).

Given the broad range of desirable and undesirable outcomes associated with workplace diversity through more than two decades of research, the challenge for diversity educators is to provide students with a more realistic preview of the workplace by exposing them to the positive and negative sides of diversity (Mannix and Neale 2005; McMillan-Capehart 2005). Accordingly, we predict that students completing a course addressing both the positive and negative sides of diversity will perceive more positive *and* negative aspects of workplace diversity, at the end of the course:

H1a and H1b Students completing a course covering the positive and negative sides of diversity will see more positive aspects (H1a) and more negative aspects (H1b) of workplace diversity at the end of the course (posttest phase) than at the beginning of the course (pretest phase).

In addition to shifts in perception resulting from exposure to positive and negative aspects of workplace diversity, existing research suggests that we should expect to find perceptual differences due to gender. Thompson's (2000) article is one example of a published descriptive account claiming that men hold more negative views of diversity than women. Mor Barak et al.'s (1998) study of 2,686 workers at an electronics company provides some empirical support for Thompson's anecdotal observations by showing that women of all racial/ethnic backgrounds held more positive perceptions of diversity than Caucasian males. Recent research by Strauss and Connerley (2003) provides further support by noting that women had more positive attitudes toward individual differences than men.

These findings are not surprising when we consider the broader historical context in which women have been viewed as members of a minority group. According to Social Identity Theory, the historical legacy of membership in a minority group should result in a greater tendency for women to experience feelings of solidarity with other minorities and to identify with their role as beneficiaries of special programs. Consequently, it should produce more positive perceptions of affirmative action and workplace diversity initiatives (Tajfel 1982). This prediction has been confirmed through multiple studies, spanning more than a decade (e.g., Beaton and Tougas 2001; Kidder et al. 2004; Kravitz and Platania 1993; Little et al. 1998; Parker et al. 1997).

Additional research has shown that women are more likely than men to focus on relationships and people (Lippa 1998, 2005) and perceive others in a positive light, resulting in a phenomenon that Winquist et al. (1998) called the *female positivity effect.* Work by King and Pate (2002) demonstrated this effect in the context of first impressions. Deutsch (2003) recently built on these studies by suggesting that the effect may extend beyond perceived *traits,* with women assigning more positive *motives* and *intentions* to others. Taken together, these ongoing streams of research suggest that the *female* students in our sample will be more likely than *male* students to embrace the positive side and overlook negative aspects of workplace diversity:

H2a and H2b Female students completing a course covering the positive and negative sides of diversity will see more positive aspects (H2a) and fewer negative aspects (H2b) of workplace diversity than male students, at the beginning and the end of the course.

Method

Participants and Procedures

To test these hypotheses, we employed a pretest-posttest paradigm. We administered De Meuse and Hostager's (2001) *Reaction-to-Diversity Inventory* (*RTDI*) on the first and last days of a required junior-level business core course in diversity at a Midwestern regional university with an annual enrollment of 10,000 undergraduate students. A repeated measures ANOVA was used to examine the effects of the diversity course as predicted in Hypotheses 1a, 1b, 2a, and 2b. A secondary interest in our study was to assess the extent to which the impact of the diversity course was still present in students during their senior year of classes, i.e., did the effects of the diversity course on diversity perceptions stick? To investigate this ancillary question, we applied the same inventory in the same manner to students in two senior-level management courses at the same university, both lacking explicit diversity content. All students were asked to complete the *RTDI* as part of a typical class session. Participation in the study was confidential and voluntary.

Study participants were enrolled in one of the following three classes and completed the *RTDI* at the beginning and end of the course:

1. *Diversity in the Workplace*—a one-credit required core course for all college of business majors, taken at the junior level. Students in this course were exposed to positive and negative aspects of workplace diversity through a variety of learning activities presented in a proactive diversity management mode, including: (a) weekly journal entries and discussions regarding diversity experiences and opinions, shared with other students through use of the Desire2Learn software package (like WebCT and Blackboard, a course management system providing online sharing of course materials, scheduling, grading, communication and collaboration, etc.); (b) in-class discussions, lectures, videos, quizzes and examinations; (c) a written critique of a current diversity article (less than one year old); and (d) a position statement on a business case involving a workplace diversity issue. Key course topics included: Workforce demographics and diversity; prejudice, discrimination and racism; legislation and EEOC; age, disabilities, and health issues; gender diversity and harassment; diversity as a business asset; and diversity trends. We obtained usable matched sets of pretest and posttest *RTDIs* for 177 of the 239 students enrolled in three different sections of this class (74% of this sub sample).
2. *Organizational Change and Development*—a three-credit elective course taken by management majors during their senior year. This course examined a myriad of issues concerning the changing workplace through a range of different learning activities: (a) in-class role plays, group discussions, lectures, videos, and examinations; (b) written reports on journal articles and newspaper stories; (c) case analyses; and (d) student presentations. Key topics included: Changes in the global marketplace, strategic forms of organizational change (downsizing, mergers, acquisitions, restructuring, re-engineering, etc.), organizational change theories, psychological contracts, employee empowerment, self-managed work teams, and personality types. We obtained 66 matched sets of *RTDIs* from 90 students (73% of this sub sample).
3. *Strategic Management in a Global Business Environment*—a three-credit required core course for college

of business majors, taken during their senior year. Students in this capstone experience applied a range of functional knowledge to the task of charting a future course for a company and ensuring the company stays on course. Key topics included: Roles and responsibilities involved in formulating and implementing a company's strategy, tailoring the strategy to characteristics of the target customer niche, incorporating industry and global trends, conducting competitive intelligence, tracking financial and market performance, maximizing company performance through knowledge of organizational structure, culture, politics, and change, and theories of ethics, corporate social responsibility, and stakeholder management. Learning activities included: (a) in-class discussions, lectures, videos, and examinations; (b) case analyses; (c) group projects focused on creating new product or service ideas and positioning the businesses for competitive advantage in the marketplace; and (d) student presentations. We received 59 matched sets of *RTDIs* from 98 students (60% of this sub sample).

We obtained a total of 302 usable matched sets of pretest and posttest *RTDI*s, roughly 71% of the entire sample of 427 students across the three different courses. Demographic characteristics of the participating sub-samples were not statistically different from the entire sample. The average age of the 302 participants was 22 ($SD = 3.53$), with a minimum age of 19 and a maximum age of 57. With respect to gender characteristics of the sub-samples, 47% were women and 53% were men. In terms of ethnicity, 94% of the sub-samples identified themselves as white, non-Hispanic, 3% were Asian or Pacific Islander, 2% were Hispanic, and 1% were American Indian or Alaskan Native. There were no African American participants in the study.

Hypotheses 1a, 1b, 2a, and 2b were examined through a repeated measures ANOVA on the 177 matched sets of pretest and posttest *RTDI*s obtained from students completing the diversity course. Our secondary interest, in seeing whether the effects of the junior-level diversity class persisted in the senior year, was explored through subsequent tests on the entire sample of 302 matched sets of *RTDI*s. Of course, interpretation of the latter results are subject to some limitations arising from inherent differences in the diversity class and the two management classes, including: (a) the diversity course was junior-level, while the management courses were senior-level; (b) number of credits and contact hours (15 contact hours per semester for the one-credit diversity course, and 45 contact hours for a three-credit management course); and (c) the diversity and strategic management courses were required of all business majors, while the organizational change and development course was an elective for management majors. Although these limitations do not apply to our examination of Hypotheses 1a, 1b, 2a, and 2b, they do constrain our exploration of the extent to which the effects of the diversity course remained in the following year of school.

Measures

The Reaction-to-Diversity Inventory

A copy of the *RTDI* is presented in Table 1 This inventory includes seven positive and seven negative words for each of the following five categories of diversity perceptions (see also Table 2):

1. *Emotional Reactions*—initial, visceral responses to workplace diversity; an individual's 'gut feelings' about diversity in general;
2. *Behavioral Reactions*—what an individual does (or intends to do) in response to diversity; verbal and nonverbal actions;
3. *Judgments*—an individual's normative evaluation of diversity; one's value judgments regarding diversity in principle (e.g., is diversity good or bad);
4. *Personal Consequences*—beliefs regarding perceived outcomes on an individual level; an individual's views on how diversity will affect them personally; and

Table 1 Reaction-to-Diversity Inventory

Directions. Circle **all** the words below which **you** frequently associate with workplace diversity

Compassionate	Ethical	Anger	Unfair
Resentment	Wisdom	Insecurity	Progress
Unity	Bureaucratic	Proud	Justified
Stress	Fight	Cooperate	Happy
Support	Listen	Blame	Rivalry
Bad	Fear	Clashes	Confused
Discovery	Sensible	Frustration	Turnover
Stubbornness	Grateful	Unjustified	Harmony
Liability	Team-building	Participate	Asset
Innovation	Expensive	Hopeful	Understand
Useless	Rewarding	Sacrifice	Worthless
Unprofitable	Good	Withdrawal	Patronize
Fair	Pressure	Merit	Enthusiastic
Excited	Collaborate	Unfriendly	Profitable
Disorder	Immoral	Regulations	Useful
Resist	Unnatural	Proper	Disagree
Sleeplessness	Advancement	Enrichment	Apprehensive
Opportunity	Friendly		

5. *Organizational Outcomes*—beliefs regarding perceived outcomes on an organizational level; an individual's views on how diversity will affect the company as a whole". (De Meuse and Hostager 2001, p. 37; Hostager and De Meuse 2002, p. 191).

The *RTDI* was developed as a means of moving beyond surveys of how individuals viewed diversity in a particular company setting (e.g., Ellis and Sonnenfeld 1994). Although such surveys may provide us with valuable information about the climate for diversity within the firm, we cannot determine whether the responses are due to situational circumstances or to one's personal views on diversity. Accordingly, the *RTDI* was created to help us more effectively understand the generalized diversity attitudes and perceptions that employees and managers bring to the workplace (De Meuse and Hostager 2001).

Among other things, knowledge of how individuals differ in their reactions to diversity can be used to design and deliver diversity learning experiences tailored to the unique views held by members of the organization. For example, employees viewing diversity in a negative light across one or more of the five dimensions could be exposed to positive aspects of workplace diversity, including beneficial outcomes on personal and organizational levels. Naturally, the opposite would be true in the case of employees holding overly positive or 'rose-colored' views of diversity, who would gain a more realistic view of diversity through exposure to the dark side of diversity. By helping us understand how individuals differ in the generalized diversity perceptions that they bring to the workplace, the *RTDI* provides a starting point in the design and delivery of diversity learning experiences aimed at fostering a more realistic and balanced view of the positive and negative aspects of workplace diversity, across the entire organizational membership (Hostager and De Meuse 2002).

De Meuse and Hostager's (2001) development of the *RTDI* began with a sample of 10 faculty members and 40 students, drawn from various academic disciplines in business and the social sciences (e.g., management, economics, sociology). Participants identified five advantages and five disadvantages of workplace diversity. A subsequent content analysis involving two raters yielded support for use of the "ABC" model of attitudes as a means of identifying three distinct categories of advantages and disadvantages listed in the responses: Affect (feelings or *emotional reactions*), Behavioral intentions (*behavioral reactions*), and Cognition (*judgments*). Further items in the response set clustered around two additional dimensions: *Personal consequences* (outcomes for individuals) and *organizational outcomes* (impacts on the organization).

Guided by their five-dimensional framework, De Meuse and Hostager (2001) embarked on a second study by searching the professional literature for additional positive and negative words associated with workplace diversity. A master list of 218 words was distilled to the final 70-item inventory through two rounds of Q-sorting. In the first round, 110 business students at the junior- and senior-level used the five-dimensional framework to sort all 218 words. Items with less than a 40% agreement rate were deleted from the list, resulting in a 100-word master list. In a second round of Q-sorting, 143 junior- and senior-level business students who had not previously participated in the study were used to pare the list from 100 to 70 words (7 positive and 7 negative words for each of the five dimensions), again using a 40% agreement cutoff (De Meuse and Hostager 2001).

Table 2 Items representing the five categories included in the Reaction-To-Diversity Inventory

	Emotional reactions	Behavioral reactions	Judgments	Personal consequences	Organizational outcomes
Positive words	Compassionate	Collaborate	Ethical	Advancement	Asset
	Enthusiastic	Cooperate	Fair	Discovery	Harmony
	Excited	Friendly	Good	Enrichment	Innovation
	Grateful	Listen	Justified	Merit	Profitable
	Happy	Participate	Proper	Opportunity	Progress
	Hopeful	Support	Sensible	Rewarding	Team-building
	Proud	Understand	Useful	Wisdom	Unity
Negative words	Anger	Blame	Bad	Clashes	Bureaucratic
	Apprehensive	Fight	Immoral	Insecurity	Disorder
	Confused	Patronize	Unfair	Pressure	Expensive
	Disagree	Resist	Unjustified	Rivalry	Liability
	Fear	Stubbornness	Unnatural	Sacrifice	Regulations
	Frustration	Unfriendly	Useless	Sleeplessness	Turnover
	Resentment	Withdrawal	Worthless	Stress	Unprofitable

Although it lacks the signature structural characteristic of a semantic differential approach—namely, bipolar scales—the *RTDI* is not unlike a semantic differential in its use of positive and negative stimulus words evoking connotative reactions toward workplace diversity. This includes positive and negative reactions to diversity along emotional, behavioral, and cognitive lines. Table 2 illustrates the range of positive and negative reactions across the five dimensions, including personal consequences and organizational outcomes. The semantic differential approach is a proven method for measuring attitudes, including affect, behavioral intentions, and cognition (Heise 1970). Like a semantic differential scale, the *RTDI* provides respondents with a set of concise stimuli, evoking a series of generalized responses regarding workplace diversity. Unlike a semantic differential scale, one advantage of the *RTDI* is that it does not force participants to respond to each item (or underlying dimension). Instead, the *RTDI* allows participants to select only those items they associate with workplace diversity, yielding a more accurate profile of how they view diversity in general, including one or more of the five underlying dimensions: emotional reactions, behavioral reactions, judgments, personal consequences, and organizational outcomes.

RTDI Forms and Coding Procedures

The *RTDI* forms were printed on colored paper as a means of distinguishing between the three different courses. Six different colors were used, enabling us to quickly collate and organize completed forms obtained from three courses, with pretest and posttest versions for the courses. Each *pretest RTDI* was stamped with an identifying number which the participant recorded and subsequently wrote on the *posttest RTDI*, enabling us to match the pretest and posttest responses for each student in an anonymous manner. Pretest and posttest data were compiled and loaded into an Excel spreadsheet by a research assistant who was blind to the study. These data were subsequently entered into an SPSS data file. To ensure they applied no differential influence on the results, course instructors had no access to any identifiable student data until the semester was completed and grades were assigned.

The *RTDI* contains seven positive and seven negative words on the five perceptual categories noted above. We instructed our research assistant to separately count and record the number of positive and negative words circled in each of the five categories, yielding scores on 10 variables for each completed *RTDI:* positive emotional reactions, positive behavioral reactions, positive judgments, positive personal consequences, positive organizational outcomes, as well as negative emotional reactions, negative behavioral reactions, negative judgments, negative personal consequences, and negative organizational outcomes. Scores for each of these variables ranged from 0 to 7.

Confirmatory Factor Analysis of Positive and Negative Diversity Measures

Using LISREL version 8.5 for Windows, we performed a *confirmatory factor analysis* (CFA) to test our expectation that the 10 variables identified in the preceding paragraph loaded onto the two factors of interest in our study: *positive* and *negative* diversity perceptions. Model fit was assessed by examining various goodness of fit indices. With 34 degrees of freedom, the CFA revealed a minimum fit function chi-square of 85.55 ($p = 0.00$) and a normal theory weighted least squares chi-square of 81.87 ($p = 0.00$). The normed fit index (NFI) was 0.95, the non-normed fit index (NNFI) was 0.96, the comparative fit index (CFI) was 0.97, and the incremental fit index (IFI) was 0.97. The results for all four of these indices met or exceeded the recommended 0.95 cutoff level for good model fit (Hu and Bentler 1999; Marsh et al. 2004). The standardized root mean square residual (SRMR) was 0.059, below the 0.08 cutoff for good models (Hu and Bentler 1999.) The root mean square error of approximation (RMSEA) was 0.067, below the recommended maximum value of 0.10 (Chau 1997; Hair et al. 1995).

Among the 45 residuals in the fitted residual matrix, only two were found to be somewhat large in terms of an absolute value of 0.3 or greater (−0.35 for positive organizational outcomes and negative emotional reactions, and 0.30 for positive and negative emotional reactions). Although there is no complete consensus on a proper threshold value, Hu and Bentler (1995) stated that an absolute value of 0.4 or more for a residual may suggest that the model is not explaining some of the correlations. None of the 45 residuals in our model met or exceeded the 0.4 level, and 43 of the residuals were below the 0.3 level.

Further evidence of convergent validity may be found by examining the completely standardized coefficients and their *t*-values. This approach assesses the statistical significance of relationships among the observed indicators and latent constructs. Table 3 shows the coefficients (loadings) and *t*-values, based on the maximum likelihood method of estimation. All *t*-values are significant at the 0.01 level, yielding further support for the two factors in our model. Based on these results, we proceeded with statistical analyses to examine Hypotheses 1a, 1b, 2a, and 2b.

Results

All subsequent statistical tests were carried out at the 0.05 level of significance using SPSS version 12.0 for windows. Hypothesis testing was conducted using the 177 matched

Table 3 Summary data for the positive and negative diversity perception factors ($N = 302$)

Exogenous indicators	Completely standardized coefficients (loadings)	*t*-values
Positive diversity perception factor		
POSEMR—Positive Emotional Reaction	0.67	–
POSJ—Positive Judgment	0.52	8.22*
POSPC—Positive Personal Consequences	0.79	11.61*
POSOO—Positive Organizational Outcomes	0.80	11.76*
POSBI—Positive Behavioral Intentions	0.76	11.28*
Negative diversity perception factor		
NEGEMR—Negative Emotional Reaction	0.84	
NEGJ—Negative Judgment	0.58	10.66*
NEGPC—Negative Personal Consequences	0.77	14.99*
NEGOO—Negative Organizational Outcomes	0.52	9.40*
NEGBI—Negative Behavioral Intentions	0.86	17.08*

* *t*-values are significant at $p < 0.01$ (one-tailed test)

sets of responses obtained from students completing the diversity course, applying a repeated measures ANOVA with: (a) the diversity course as a within-subjects factor, (b) gender as a between-subjects factor (81 female and 96 male participants = 177 matched sets of pretest and posttest responses), and (c) two measures—TOTPOS = the total number of positive words, and TOTNEG = the total number of negative words. In practical terms, the negative and positive diversity perception factors represent the total number of negative words and positive words circled by a participant on the *RTDI*. For example, circling a greater number of positive words in the posttest phase would suggest that the diversity learning participant now perceives a larger set of positive aspects associated with workplace diversity. Descriptive statistics and correlations are provided in Table 4.

Consistent with our prediction in Hypothesis 1a, the repeated measures ANOVA results presented in Table 5 confirm that students in the diversity course circled a significantly higher number of *positive* words in the posttest phase ($M = 14.32$) than they did in the pretest phase ($M = 9.53$). Contrary to our expectations for Hypothesis 1b, although the diversity course produced an increase in the mean number of *negative* words circled by students, pretest ($M = 4.06$) to posttest ($M = 4.50$), this difference was not significantly different ($F = 1.66$, $p = 0.20$).

The results in Table 5 support our predictions regarding the effects of *gender* on diversity perceptions. Consistent with prior research on the *female positivity effect* and our prediction in Hypothesis 2a, *female* students in the diversity course circled a significantly higher number of positive words than their male counterparts in the pretest phase ($M = 10.81$ and $M = 8.56$, respectively) and the posttest phase ($M = 15.68$ and $M = 12.51$, respectively). However, further support for a *female positivity effect* was not forthcoming in the results for Hypothesis 2b: Although female students in the diversity course circled fewer *negative* words than males in the pretest phase ($M = 3.29$ and $M = 4.65$, respectively) and the posttest phase ($M = 4.08$ and $M = 5.04$, respectively), these differences were not significant ($F = 2.41$, $p = 0.12$). Lastly, we found no significant interaction effects between the diversity *class* and *gender* on the number of *positive* words ($F = 0.65$, $p = 0.43$) and *negative* words ($F = 0.18$, and $p = 0.67$) circled on the *RTDI* by students in the diversity class.

Having analyzed the results for Hypotheses 1a, 1b, 2a, and 2b, we then examined the extent to which the junior-level diversity course had lasting effects on positive and negative diversity perceptions held by students in senior-level management courses. A MANOVA test confirmed there were no significant differences between the two management classes on the TOTPOS and TOTNEG dependent variables ($F = 0.21$, $p = 0.65$). Accordingly, we combined the data from the organizational change and

Table 4 Descriptive statistics and correlations for the diversity class pretest-posttest comparison ($N = 177$)

Variable	*M*	*SD*	1	2	3	4	5	6
1. Pretest total positive words	9.53	6.48	–					
2. Pretest total negative words	4.06	4.98	−.17*	–				
3. Posttest total positive words	14.32	9.01	.57**	−.18*	–			
4. Posttest total negative words	4.50	6.77	−.13	.46**	−.02	–		
5. Gender	1.54	0.49	−.17*	.13	−.17*	.07	–	
6. Age	20.74	4.20	.04	−.09	−.04	−.07	−.01	–

Note: Gender (1 = Female; 2 = Male)

* $p < 0.05$; ** $p < 0.01$

strategic management classes (combined $N = 125$) for use in comparison with the data obtained from the diversity class ($N = 177$). Descriptive statistics and correlations for the combined datasets ($N = 302$) are provided in Table 6.

When the goal of this data analysis was to compare *change scores in two groups*, Arvey and Cole (1989) recommend using the ANCOVA approach, with pre-test scores as the covariate. Following this advice, we ran a MANCOVA with *class* and *gender* as independent variables, *pretest scores* on the *positive* and *negative diversity perception factors* as covariates, and *posttest scores* on the *positive* and *negative diversity perception factors* as dependent variables. The MANCOVA results presented in Table 7 confirm that the pretest *positive* diversity perception factor—included in the model as a covariate—was significantly related to the posttest positive diversity perception factor ($F = 134.94$, $p = 0.00$) but was not significantly related to the posttest negative diversity perception factor ($F = 0.83$, $p = 0.36$). A similar outcome was obtained for the *negative* diversity perception factor—the second covariate in the model—which proved to be significantly related to the posttest negative diversity perception factor ($F = 86.67$, $p = 0.00$) but not significantly related to the posttest positive diversity perception factor ($F = 1.41$, $p = 0.24$).

Consistent with our prediction in Hypothesis 1a, we found that students in the diversity course circled a significantly higher number of *positive* words in the posttest phase ($M = 14.32$) than students in the comparison courses ($M = 12.94$), after controlling for the pretest scores using the MANCOVA approach ($F = 21.43$, $p = 0.00$). Interestingly enough, we found evidence indicating that senior-level students held a *less realistic view* than their junior-level counterparts. Students in the junior-level diversity course circled a significantly higher number of *negative* words in the posttest phase ($M = 4.50$) than students in the comparison courses ($M = 2.33$), after controlling for the pretest scores through the MANCOVA ($F = 4.78$, $p = 0.03$). This result is even more striking when we consider that while the senior-level students circled an average of only 2.33 negative words, they circled a mean number of nearly 13 positive words.

The results in Table 7 mirror the earlier results regarding the effects of *gender* on diversity perceptions. Consistent with our findings for Hypothesis 2a, we found that *female* students across *all* courses circled a

Table 5 Repeated measures ANOVA results for the diversity class pretest-posttest comparison ($N = 177$)

Source	Dependent variable	Type III sum of squares	df	Mean square	*F*	Significance
Diversity class	Change in *TOTPOS*	1788.52	1	1788.52	62.53	0.01**
	Change in *TOTNEG*	32.31	1	32.31	1.66	0.20
Gender	Change in *TOTPOS*	673.99	1	673.99	7.38	0.01**
	Change in *TOTNEG*	123.08	1	123.08	2.41	0.12
Diversity class × Gender	Change in *TOTPOS*	18.68	1	18.68	0.65	0.43
	Change in *TOTNEG*	3.56	1	3.56	0.18	0.67
Residual	Change in *TOTPOS*	5291.68	174	30.41		
	Change in *TOTNEG*	3608.40	174	20.74		

Note: *TOTPOS* = Positive Diversity Perception Factor, operationalized as the total number of positive words circled on the *RTDI*; *TOTNEG* = Negative Diversity Perception Factor, operationalized as the total number of negative words circled on the *RTDI*

** $p < 0.01$

Table 6 Descriptive statistics and correlations for the comparison of diversity and management classes ($N = 302$)

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Class	1.40	0.50	–						
2. Pretest total positive words	10.83	7.05	.23**	–					
3. Pretest total negative words	8.56	4.58	−.14*	−.10	–				
4. Posttest total positive words	13.52	8.74	−.06	.55**	−.10	–			
5. Posttest total negative words	3.78	6.00	−.20**	−.12*	.48**	.00	–		
6. Gender	1.53	0.50	−.09	−.16**	.17**	−.17**	.09	–	
7. Age	22.01	3.53	.09	.07	−.07	−.04	−.07	−.02	–

Note: Class = Treatment (1 = Diversity Class; 2 = Management Classes); Gender (1 = Female; 2 = Male)

* $p < 0.05$; ** $p < 0.01$

Table 7 MANCOVA results comparing the effects of the diversity and management classes ($N = 302$)

Source	Dependent variable	Type III sum of squares	df	Mean square	*F*	Significance
Pretest *TOTPOS*	Posttest *TOTPOS*	6663.69	1	6663.69	134.94	0.01**
(Covariate #1)	Posttest *TOTNEG*	20.30	1	20.30	0.83	0.36
Pretest *TOTNEG*	Posttest *TOTPOS*	69.53	1	69.53	1.41	0.24
(Covariate #2)	Posttest *TOTNEG*	2128.36	1	2128.36	86.67	0.01**
Class	Posttest *TOTPOS*	1058.11	1	1058.11	21.43	0.01**
	Posttest *TOTNEG*	117.44	1	117.44	4.78	0.03*
Gender	Posttest *TOTPOS*	217.00	1	217.00	4.39	0.04*
	Posttest *TOTNEG*	1.10	1	1.10	0.05	0.83
Class × Gender	Posttest *TOTPOS*	0.61	1	0.61	0.01	0.92
	Posttest *TOTNEG*	0.32	1	0.32	0.01	0.91
Residual	Posttest *TOTPOS*	14468.89	295	49.38		
	Posttest *TOTNEG*	7195.50	295	24.56		

Note: *TOTPOS* = Positive Diversity Perception Factor, operationalized as the total number of positive words circled on the *RTDI*; *TOTNEG* = Negative Diversity Perception Factor, operationalized as the total number of negative words circled on the *RTDI*

* $p < 0.05$; ** $p < 0.01$

significantly higher number of positive words in the posttest phase ($M = 15.35$) than male students ($M = 12.32$), controlling for pretest scores through the use of the MANCOVA ($F = 4.39$, $p = 0.04$). Moreover, we again found that female students did not circle significantly fewer *negative* words than males in the posttest phase ($M = 3.06$ and $M = 4.11$, respectively), after controlling for pretest scores through the MANCOVA ($F = 0.05$, $p = 0.83$). Finally, we found no significant interaction effects due to *class* and *gender* on the number of *positive* words ($F = 0.01$, $p = 0.92$) or *negative* words ($F = 0.01$, $p = 0.91$) circled by study participants on the *RTDI*.

Discussion

Effects of a Diversity Course on Positive and Negative Diversity Perceptions

Our study reveals some interesting findings regarding the impact of a diversity learning experience on student perceptions. Consistent with a *realistic job preview approach* to designing and delivering diversity learning experiences, students enrolled in a course addressing the positive and negative sides of diversity circled more positive and negative words on the *RTDI* at the end of the semester. Although the gain in negative words by students in the diversity course was not statistically significant, the increase was large enough to produce a mean significantly higher than the average number of negative words circled by students completing the senior-level management courses. Senior-level students also circled significantly fewer positive words than their junior-level counterparts, suggesting that the effects of a diversity learning experience in expanding our view of its positive and negative aspects may erode over time.

Taken together, these findings suggest that: (a) it is possible to design and deliver a diversity course fostering an expanded range of positive *and* negative diversity perceptions, and (b) we should expect the effects of such a course to diminish with time. In our study, the length of time between taking the diversity course (junior standing) and the other two courses (senior standing) was approximately one year. Further study will help us better understand how quickly the effects erode, and how often a diversity learning experience is needed in order to sustain prior gains in learning about positive and negative aspects of workplace diversity. Certainly, we would hope the benefits of a diversity course would sustain longer than one year. Additional research will also help us determine the extent to which an increased emphasis on the dark side of diversity will yield a more *balanced* view of diversity's positive and negative aspects, closing the gap in number of positive and negative words circled on the *RTDI*.

One important implication for administrators, educators, and trainers is that it should be possible to tailor the design and content of a diversity learning experience to the goals of the organization and the characteristics of its members. For example, administering an instrument in the pretest phase may reveal that employees in one department hold predominantly negative views of diversity, while employees in another department view workplace diversity in overly optimistic terms through veritable 'rose-colored glasses.' These findings may be used by trainers to develop and administer separate workshops aimed at exposing participants to a more balanced view of the positive and

negative aspects of diversity in the workplace. Alternatively, it may be possible to structure and implement a learning experience in which members of both departments share and test their diversity perceptions in a mode of mutual exploration, resulting in a more balanced view for participants. Of course, such an approach may run the risk of polarizing and intensifying preconceived notions, as opposed to balancing and moderating diversity perceptions. Administering an instrument in the posttest phase will enable session designers to gauge the effects of the learning experience on participants.

Effects of Gender on Positive and Negative Diversity Perceptions

Is it true that men are more likely than women to hold negative perceptions of workplace diversity (Thompson 2000)? Is it true that women are more likely than men to see the positive side of diversity (Mor Barak et al. 1998; Strauss and Connerley 2003)? The results of our study suggest a 'no' response to the first question and a 'yes' response to the second question. While we found no significant differences by gender on the number of *negative* words circled, female students in the diversity class began and ended the semester with more *positive* diversity perceptions than their male counterparts, circling significantly more positive words on the *RTDI* in the pretest and the posttest phases.

Our study suggests that there is more than one way in which to define the *female positivity effect*; in addition to analyzing the extent to which women held more positive diversity perceptions than men, we have examined the degree to which women held fewer negative diversity perceptions than men. Our study demonstrates how different approaches to defining the female positivity effect can produce different results. Perhaps studies that adopt only one approach to defining this effect run the risk of capturing a simplistic and incomplete view of such a complex perceptual phenomenon. Our study suggests that we should adopt a more complex view of the female positivity effect in which we do not assume that holding more positive perceptions is equivalent to holding fewer negative perceptions (Bartunek et al. 1983; Hostager and De Meuse 2002; Streufert and Swezey 1986).

In retrospect, our findings make better sense when we consider a more complex view of the female positivity effect within the broader historical context of women as a minority group. As we noted earlier, Social Identity Theory predicts that identifying with members of other minority groups should lead women to hold more positive views toward affirmative action and diversity initiatives (Tajfel 1982). Social identification is not limited to positive aspects of the focal group. Ingroup membership includes commonalities based on positive *and* negative features (Elbedour et al. 1997). Therefore, we should not be surprised to find that women perceive positive *and* negative aspects of diversity. What we may be observing in our study is the combined result of the female positivity effect and social identification in action—an *inclination* to perceive the positive, coupled with an *ability* to perceive both positive and negative aspects of a minority group's situation, resulting in female participants circling fewer negative words than their male counterparts, albeit not at a significantly lower level. Future research should explore the potential interactions of these effects in a more systematic and explicit manner.

Another interesting finding was that *Gender* did not interact with *Class* to produce appreciable differences in the number of positive and negative words associated with workplace diversity. The good news for educators and administrators is that the diversity course had roughly the same effect on the diversity perceptions held by female and male students. Our findings suggest that trainers and educators should expect that diversity courses, programs, workshops, and seminars will yield equivalent effects for female and male participants. This does not mean to say that female and male participants will bring the same level of positive and negative diversity perceptions to the learning experience, in the first place. The assessment of diversity perceptions can provide valuable insights for identifying gender-based differences in diversity perceptions held by participants in the pretest phase. This information, in turn, may be used to design and implement more effective diversity learning experiences by taking into consideration the different perceptions that participants bring to the learning experience.

Limitations of the Study

Although the use of college students was appropriate, given the focus of our study on the effects of a diversity course delivered in an academic setting, the use of this sample raises concerns regarding generalizability to other contexts. Future studies should expand the external validity of our approach by exploring the use of the *RTDI* and other instruments to measure the effects of seminars, workshops, and other forms of diversity learning experiences on managers and employees in real-world work settings. Our use of a sample comprised of junior- and senior-level business students helps establish a fairly representative bridge to these settings, considering the business training and experiences these students have received to date, and the close temporal proximity of their entry into the workforce.

While our sample was diverse with regard to gender, our study was limited by the lack of diversity in other key

aspects of our sample, including racial, ethnic, and age-related diversity. Future studies would benefit from a sample reflecting greater geographic diversity as well, drawing participants from beyond the Midwest, to other regions of the United States, and to other countries in the world. Ultimately, we envision a series of cross-cultural studies of diversity perceptions and the effects of diversity learning experiences on these perceptions.

Finally, our study was limited in focusing on changes in diversity perceptions and, as such, it was not equipped to measure other important effects in the form of behavioral changes and organizational outcomes such as decreased absenteeism and turnover (Carrell et al. 2006; Carrell and Turner 1995; Jackson 1992; Tsui et al. 1992), increased creativity and innovation (Carrell and Mann 1995; McLeod et al. 1996; Nemeth and Kwan 1987; Nemeth and Wachtler 1983), or improved profitability (Kochan et al. 2003; McCuiston and Wooldridge 2004; Richard 2000). Additional research is needed to establish explicit and systematic connections between the diversity perceptions we bring to a setting, the nature and contents of the diversity learning experiences to which we are exposed, the effects of these experiences on our diversity perceptions, and the role these perceptions play in guiding our behavior and influencing organizational outcomes.

Implications for Future Research

Our study demonstrates how an instrument may be used to measure perceptions before and after a diversity learning experience. Through use of this approach, educators and administrators can evaluate the effects of the experience on positive and negative diversity perceptions. This information can also assist in the design and implementation of a customized learning experience tailored to participants' incoming views and the desired learning outcomes.

One of the next logical steps in future research is to build on the approach pioneered by Hostager and De Meuse (2002), using data obtained from the *RTDI* to explore gains in the *complexity* of participants' diversity perceptions, yielding measures of perceptual balance, breadth, and depth. This type of research may help us contribute to the growing line of inquiry within the 'intelligence' paradigm, which has been expanded from *cognition* (IQ) to *emotion* (EQ—Cherniss and Goleman 2001; Goleman 1995, 1998) and more recently to *culture* (CQ—Early and Peterson 2004). Following this lead, future studies should explore the development of a '*diversity intelligence*' *quotient* (*DQ*) that could assist educators and administrators in designing and implementing diversity learning experiences to promote a more complex understanding of the positive and negative aspects of diversity, spanning cognitive, behavioral, and emotional dimensions, in a broad and deep manner.

Our study raises a fundamental question relevant to all future research on the design, implementation, and effects of diversity courses, programs, workshops, and seminars: What should be the goal of a diversity learning experience? Should the experience highlight the positive side of diversity? Or should the goal be to provide a more 'realistic diversity preview' by exposing participants to positive *and* negative aspects of diversity? If participants bring an overly 'rose-colored' view of diversity to the learning experience, should the session focus on negative aspects and how to effectively deal with those aspects (e.g., strategies for identifying and dealing with backlash against diversity from white males who feel they are not being treated equally)? Consistent with a "needs assessment" approach (Roberson et al. 2003), administering an instrument in the pretest phase should help trainers to design a learning experience tailored to positive and negative diversity perceptions held by session participants.

Implications for Practice

Our study demonstrates the benefits of using an instrument to assess the effects of a diversity learning experience using a pretest-posttest paradigm. The approach has wide applicability as a source of feedback to those who support, fund, design, administer, and participate in diversity learning experiences in academic and work settings. Course instructors, workshop facilitators, educational administrators, business managers, training and development coordinators and many others should benefit from this research. How? By measuring the impact of a diversity learning experience, providing crucial feedback to those who supported, funded, developed, implemented, and participated in the experience.

Our findings should be of great interest to students, parents, teachers, workshop facilitators, school administrators, accreditation boards and more, spanning all levels from preschool, K-6, middle school, high school, community colleges, to private colleges and public universities. Increased diversity is an irrefutable demographic fact of life. Administering an instrument in a pretest-posttest paradigm helps us gauge the effects of a diversity learning experience and drive home positive learning goals. As such, this approach has the potential to make a significant contribution to the practice of diversity education across all levels and domains, from academic to workplace settings.

In the workplace, feedback from our approach should play an important role in effectively managing an increasingly diverse workforce through the improved design and administration of diversity training experiences. We need to move beyond admonitions, exhortations, and prescriptions for improved practice in this area. Our study contributes to this goal by examining the use of an existing

measure—the *Reaction-To-Diversity Inventory*—to assess changes in diversity perceptions before and after a diversity learning experience. In addition to playing a key role in the design and delivery of diversity learning experiences, our approach should help institutions document the outcomes of these experiences pursuant to the reporting requirements of external bodies involved in various forms of professional accreditation and/or certification. Such an approach requires accountability. Participants, practitioners, and researchers benefit when evaluation becomes an integral component in the design and delivery of diversity learning experiences.

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