An Investigation of Attitude Change in Inclusive College Classes Including Young Adults With an Intellectual Disability

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Abstract Postsecondary education programs for students with an intellectual disability are expanding, and an emerging question concerns the impact of these programs on campus communities. The author examined changes in attitudes toward diversity among peers without disabilities who participated in an inclusive college course that had students with an intellectual disability. The Miville-Guzman Universality-Diversity Scale (M-GUDS) was administered to college students enrolled in either inclusive or noninclusive college classes. M-GUDS scores did not differ between groups at the start of the semester, but students enrolled in inclusive courses showed significantly greater openness to diversity at the end of the semester. Findings suggest that inclusive college programs that enroll both students with and without an intellectual disability in regular college courses may foster positive attitudes about acceptance and diversity among students without such a disability.

Keywords: attitudes, inclusion, intellectual disability, secondary education, students

Negative stereotypes and prejudices against minority groups are pervasive in our society (Branscombe, Schmitt, & Harvey, 1999; Hinshaw, 2005; Jost, Banaji, & Nosek, 2004; Priest, 1991; Todd, Galinsky, & Bodenhausen, 2012), and this can lead to a variety of negative outcomes, including discrimination in the workplace, inequities in educational and social opportunities, diminished social relations, poor self-image, and even increases in violence and criminal behaviors (e.g., Bertrand & Mullainathan, 2003; Bennett & Gaines, 2010; Czopp, 2010; Inzlicht & Schmader, 2012; Pettigrew & Meertens, 1995; Rudman & Ashmore, 2007; Taylor, 2011). Given the deleterious effect of prejudice and discrimination across social domains, researchers have investigated mechanisms for reducing these biases and promoting increased tolerance of diversity. One technique that has proven effective in reducing biases in some domains is direct, positive contact with minority groups (Allport, 1954; Slininger, Sherrill, & Janowski, 2000). Contact theory postulates that positive contact between different groups of people can reduce negative biases, stereotyping, expectations, and discriminatory behaviors (e.g., Allport, 1954; Roper, 1990). It is important to note that mere contact or physical integration may be insufficient to foster relationships or evoke attitude change (e.g., Nisbet, 1992; Sable, 1995; Taylor, Bilken, & Knoll, 1987); rather, several key factors influence whether contact among groups will create favorable change in attitudes or behaviors. Interactions that are most likely to promote positive outcomes include those in which all individuals share an equal status, those in which individuals can engage in a common goal, and those that allow individuals to get to know each other well (Allport, 1954; Cook, 1962; Devine & O’Brien, 2007; Hughes, Carter, Hughes, Bradford, & Copeland, 2002; Tripp, French, & Sherrill, 1995).

Positive changes that follow intergroup contact have been observed with race relations (e.g., Emerson, Kimbro, & Yancey, 2002; Spanierman, Neville, Liao, Hammer, & Wang, 2008; Van Bavel & Cunningham, 2008), and pertinent to our work, with acceptance of individuals with intellectual disabilities (e.g., Burns, Storey, & Certo, 1999; Carter, Hughes, Copeland, & Breen, 2001; Findler & Vardi, 2009; Floyd, Purcell, Richardson, & Kupersmidt, 2009; Griffin, Summer, McMillan, Day, & Hodapp, 2012; Haring, Breen, Pitts-Conway, Lee, & Gaylord-Ross, 1987; Hughes et al., 2002; Kishi & Meyer, 1994; Krajewski & Flaherty, 2000; Novak, Eyeles, & Christensen, 2011). Growing evidence suggests that acceptance of individuals with disabilities is facilitated when schools, social activities, and sports teams are “inclusive,” that is, when individuals with and without disabilities participate together as equals. For example, Wilhite, Devine, and Goldberg (1999) observed a high degree of social acceptance and positive perceptions of disability when teens participated in inclusive activities that featured common interests and reciprocal relationships. Similarly, children with and without an intellectual disability who participated in an inclusive summer camp were equally likely to be nominated by their peers in the camp as “friends to hang out with” and as “new friends” (Siperstein, Glick, & Parker, 2009). Additionally, 80% of college students who participated in Best Buddies (a program that fosters...
inclusive, reciprocal friendships) developed a more positive attitude about people with an intellectual disability and a better understanding of the challenges they face (Hardman & Clark, 2006). Across other studies, there is evidence that inclusive experiences can debunk myths and stereotypes (Bedini, 2000; Devine & Lashua, 2002; Devine & Willhite, 2000; Novak et al., 2011) and foster friendships and social interactions (Bedini, 1993; Edwards & Smith, 1989; Kalyvas & Reid, 2003).

Collectively, these empirical findings are consistent with contact theory in suggesting that interactions between individuals with and without disabilities in inclusive settings help foster nonprejudicial attitudes and promote social and personal development among nondisabled individuals. These data hold important implications for emerging postsecondary programs designed to serve students with an intellectual disability. Specifically, the data suggest that when postsecondary education opportunities are inclusive, that is, when they include students with and without intellectual disabilities in classes and activities together as peers with equal status, they may foster positive attitudes about disability among matriculating college students. The present study was designed to explore this notion. The critical question was whether the benefits of inclusion would be evident for students without disabilities who experience contact with students with intellectual disabilities as classmates in a college course. Because most institutions of higher education seek to promote diversity as part of their educational mission, the present study examined whether participating in an inclusive course resulted in openness not only to disability but also to multiple forms of diversity (e.g., gender, race, culture).

METHOD

Participants

Participants (n = 138) were female, first-year college students1 (ages 18–23 years) who did not have an intellectual disability2 enrolled in one of several introductory psychology courses at the College of Charleston. Participants were divided into two groups, based on the inclusive nature of their psychology course. Participants in the inclusive group (n = 53) were enrolled in one of two different inclusive psychology courses that included students with an intellectual or developmental disability (such as autism, Down syndrome, pervasive developmental delay). Participants in the control group (n = 85) were enrolled in one of four different noninclusive psychology courses, and did not have any other classes with students with an intellectual disability at the college.

Students enrolled in these introductory psychology courses as one way to fulfill a social science general education requirement. Students did not know at the time of enrollment that the course was (or was not) inclusive of students with intellectual disabilities, and thus the specific section in which students enrolled was not influenced by the inclusivity of the course. Students who were enrolled in the inclusive sections learned about that status when the semester began.

To ensure that any group differences were not a function of a single cohort or instructor, the control group was composed of students from four different noninclusive psychology courses, and the inclusive group was composed of students from two different inclusive courses. All the faculty members teaching across the different sections had doctorates in psychology and were tenure-track faculty. Those instructors teaching the inclusive sections were including students with intellectual disabilities for the first time, and received training in differentiation and universal design. They were recruited to teach the inclusive courses as a result of both student interest in the discipline and expressed willingness by the faculty to engage in inclusion. They also received ongoing support throughout the semester from an expert who had a background in special education and course differentiation.

The majority of participants in both the control group (79%) and the inclusive group (82%) were Caucasian. Roughly 20% of each group was African American. The inclusive psychology courses were composed of roughly 10% students with typical developmental disabilities (e.g., autism, intellectual disability, Down syndrome), and 90% of students without such disabilities, with each inclusive course having a minimum of four students with an intellectual or developmental disability and a maximum of 35 total students. The eight students with an intellectual disability (ages 19–24 years) were also first-year college students. There were two male and two female students with an intellectual disability in each of the inclusive courses. Three of the eight students with intellectual disabilities were African American. Students with intellectual disabilities were not identified as such in class. Nonetheless, students without disabilities were aware that the class included students with intellectual disabilities, because two of the students with intellectual disabilities self identified, while two others could be identified by physical characteristics (such as those associated with Down syndrome). Of these four students, two were enrolled in each of the inclusive sections. Thus for each inclusive section, students were aware that there were at least two students with an intellectual disability enrolled.

Within the inclusive courses, the students with an intellectual disability attended all class sessions and participated in class discussions and activities as regular members of the classroom community. They also completed all assignments and assessments (with accommodations and modifications as needed). Accommodations and modifications, such as additional testing time, different test material and format, additional study guides, shorter paper assignments, or oral reports in place of written
assignments, were made for individual assignments (e.g., tests, papers, quizzes). These accommodations were determined on an individualized basis for each student. All students with an intellectual disability also had peer support from a student outside of the course. The peer mentor did not attend the class, but did provide, outside of class, such supports as helping with time management, organization, and study skills.

Each week, students came together for regular class time (3 hours/week), transition-to-college forums (1 hour/week), and group project work (1–2 hours/week). During the 3 hours of regular weekly classroom time, students engaged in small group (four to five students) discussions to address applied questions related to the course material (e.g., “Given what you know about human memory, describe a new study strategy that you are going to adopt” or “Discuss a time when you conformed with your friend’s behavior, and explain why you think you conformed”). The instructor facilitated group formation so that the students with intellectual disabilities were not together in the same group, nor was the group membership consistent across discussion sessions. In addition to regular class hours, all students participated in weekly sessions designed to facilitate their transition as college students. These sessions were led by a second-year student and were designed to allow students to support each other as they adapted to college routines. Finally, students were also placed into small groups to work on a semester-long group project. Students devoted an average of 1–2 hours each week to this group project. The instructor assigned the students to groups so that students with intellectual disabilities were integrated across different groups, and the same students worked together throughout the semester. To facilitate successful inclusion of students with intellectual disabilities in the group project, all students in the class were instructed to write down a list of strengths and to identify two or three project objectives for which they would be responsible. Students with intellectual disabilities participated in web design, social project objectives for which they would be responsible. Students in the noninclusive courses also participated in small group discussion and group projects, but these groups did not include students with an intellectual disability. All of the students who participated in the study did so as a way of receiving course credit; participation was voluntary and confidential. Roughly 70% of the students in both inclusive and noninclusive courses agreed to participate. All students were enrolled in their introductory psychology courses for 14 weeks, and completed the survey once at the start of the semester (within the first week), and again at the end of the semester (in the final week of classes). Four students in the inclusive group and seven students in the control group failed to complete the survey at the end of the semester, and thus their data were excluded from analyses.

**Materials**

Materials for the study included the Miville-Guzman Universality-Diversity Scale (M-GUDS; Miville et al., 1999), a 45-item survey used to measure universal-diverse orientation (UDO). UDO provides an index of an individual’s attitudes toward others, and assesses whether individuals are both aware of, and accepting of, differences in others. The M-GUDS has been used to assess openness to diversity in large samples of college students at different institutions, including male and female samples, and Caucasian and African American samples. Both within and across these samples, the M-GUDS has been shown to have high internal consistency and retest reliability, as well as construct and discriminant validity (e.g., Fuertes, Miville, Mohr, Sedlacek, & Gretchen, 2000; Miville et al., 1999).

The M-GUDS was used in this study because it addresses tolerance of disability, as well as race, gender, culture, and religion, thus allowing for a more global assessment of diversity tolerance. Scores on the M-GUDS have been found to predict students’ attitudes toward diversity of people and programs in a college setting (Fuertes, Sedlacek, et al., 2000), and correlate negatively with measures of social intolerance (e.g., homophobia, dogmatism) (Miville et al., 1999). Participants completed the scale both at the start and the completion of the semester. For the M-GUDS survey, participants read statements such as, “I place a high value on being deeply tolerant of others’ viewpoints,” and rated their agreement with each statement on a six-point Likert-type scale ranging from strongly disagree (1) to strongly agree (6). The M-GUDS provides not only an overall assessment of UDO, but also consists of three subscales that evaluate the affective, behavioral, and cognitive components of UDO (Fuertes, Miville, et al., 2000).

The affective subscale assesses a sense of connection (SC) with others, and reflects the degree of comfort with diverse individuals. Items on this subscale include statements such as, “Getting to know someone of another race is generally an uncomfortable experience for me” and “I feel a sense of connection with people from different countries.” The behavioral subscale evaluates level of interaction with diverse people and activities, and is referred to as diversity of contact (DC). Items on this subscale include statements such as, “I attend events where I might get to know people from different racial backgrounds” and “I would be interested in participating in activities involving people with disabilities.” The cognitive subscale, referred to as relativistic appreciation (RA), examines one’s appreciation of similarities and differences across individuals, and the ways that these differences impact one’s own development. Items on this subscale include statements such as, “Knowing how a person differs from me greatly enhances our friendship” and “It’s often hard to find things in common with people from another generation.” Each of the subscales includes items that are phrased positively and negatively to help eliminate potential response bias. Negatively phrased items are reversed scored for the data analysis.

**Procedure**

All participants were recruited through an online experiment registration system that allowed students to enroll in research studies as one way of earning course credit. All participants were informed that the study involved a survey that assessed attitudes and behaviors about diversity. Individuals who participated did so through an online platform (Survey Monkey). Participants were allowed to complete the survey at any computer with Internet access, and responses were collected from each sample.
TABLE 1

Mean total M-GUDS and subscale scores for inclusive and control groups*

<table>
<thead>
<tr>
<th>Group</th>
<th>Affective (SC scale)</th>
<th>Cognitive (RA scale)</th>
<th>Behavioral (DC scale)</th>
<th>Total UDO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclusive (n = 49)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>64.6 (8.7)</td>
<td>61.2 (6.8)</td>
<td>61.0 (8.2)</td>
<td>186.8 (19.8)</td>
</tr>
<tr>
<td>Posttest</td>
<td>68.1 (10.4)</td>
<td>62.7 (7.3)</td>
<td>67.4 (10.1)</td>
<td>198.4 (25.0)</td>
</tr>
<tr>
<td>Control (n = 78)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>64.9 (8.3)</td>
<td>60.6 (6.4)</td>
<td>60.9 (9.7)</td>
<td>186.4 (21.4)</td>
</tr>
<tr>
<td>Posttest</td>
<td>64.9 (8.5)</td>
<td>61.0 (6.0)</td>
<td>60.6 (8.1)</td>
<td>186.4 (18.4)</td>
</tr>
</tbody>
</table>

*Standard deviations are in parentheses.

population for 1 week at the start of the semester, and 1 week at the end of the semester. All responses were confidential.

RESULTS

Mean total M-GUDS scores for each group, as well as the scores on the three subscales (SC, RA, and DC) are reported by time of assessment in Table 1. A series of 2 (group) × 2 (assessment time) repeated measures analyses of variance were conducted to evaluate performance on the total M-GUDS scores as well as each subscale. With respect to the total M-GUDS score, there was not a reliable main effect of group, $F(1, 125) = 2.6$, $p = .11, \eta^2 = 0.02$, but there was a main effect of assessment time, $F(1, 125) = 66.6, p < .01, \eta^2 = 0.35$, with participants scoring higher overall on the M-GUDS at the end of the semester than at the beginning. This main effect was qualified, however, by a group × assessment time interaction, $F(1, 125) = 65.4, p < .01, \eta^2 = 0.34$. As can be seen in Table 1, this interaction was driven by the fact that the total M-GUDS scores increased reliably across the semester for participants in the inclusive group, $F(1, 48) = 62.1, p < .01, \eta^2 = 0.56$, but not for those in the control group ($F < 1$). Scores for the inclusive and control groups did not differ at the start of the semester ($F < 1$), but participants in the inclusive group scored significantly higher on the M-GUDS at the end of the semester than those in the control group, $F(1, 125) = 9.02, p < .01, \eta^2 = 0.07$.

A similar pattern was observed for the affective (SC) scale. There was no main effect of group ($F < 1$), but there was a reliable effect of assessment time, $F(1, 125) = 10.5, p < .01, \eta^2 = 0.08$. Again, this main effect was qualified by a reliable group × assessment time interaction, $F(1, 125) = 10.3, p < .01, \eta^2 = 0.08$. As with the total M-GUDS score, scores on the SC scale did not differ across groups as the start of the semester ($F < 1$), but the inclusive group showed a reliable increase in scores across the semester, $F(1, 48) = 16.3, p < .01, \eta^2 = 0.25$, and their scores at the end of the semester were marginally greater than those for the control group, $F(1, 125) = 3.6, p = .062, \eta^2 = 0.03$.

The data were also similar for the behavioral (DC) scale. Here, there was a reliable main effect of group, $F(1, 125) = 5.2$, $p = .024, \eta^2 = 0.04$, as well as a main effect of assessment time, $F(1, 125) = 22.2, p < .01, \eta^2 = 0.15$. These main effects were qualified by a reliable group × assessment time interaction, $F(1, 125) = 26.7, p < .01, \eta^2 = 0.18$. Scores for the inclusive and control groups did not differ at the start of the semester ($F < 1$) but scores for the inclusive group at the end of the semester were reliably higher than their own scores from the start of the semester, $F(1, 48) = 47.6, p < .01, \eta^2 = 0.50$, and were also reliably higher than the scores for the control group at the end of the semester, $F(1, 125) = 17.4, p < .01, \eta^2 = 0.12$. The one exception to the pattern was the scores for the cognitive (RA) scale. For this scale, there were no reliable main effects and no interaction, all probabilities are >.10.

DISCUSSION

The purpose of this study was to explore whether inclusion of students with intellectual disabilities in regular college courses positively impacted the attitudes of the other students about diversity (i.e., did having students with disabilities enrolled in their courses make the feel more favorably toward diversity). Previous research on contact theory demonstrates that positive interaction between different groups of people can reduce negative biases, stereotyping, expectations, and discriminatory behaviors (e.g., Allport, 1954; Burns et al., 1999; Carter et al., 2001; Emerson et al., 2002; Findler & Vardi, 2009; Slininger et al., 2000; Van Bavel & Cunningham, 2008). The purpose was to extend these findings by assessing openness to diversity in inclusive and noninclusive courses on a college campus.

This study assessed attitudes toward diversity at both the start and the completion of a semester. Data from the two applications of the M-GUDS (Miville et al., 1999) indicated that the inclusive and control groups had similar scores on the M-GUDS at the start of the semester, but not at the end. Because participants were not aware at the time of course enrollment that students with intellectual disabilities would (or would not) be included in their course section, there was no reason to expect any group differences in openness to diversity at the start of the semester. The data confirm this expectation and indicate that the student attitudes in both groups were very similar at the outset.
By the end of the semester, however, scores on the M-GUDS were substantially different between groups, as only those in the inclusive group showed a significant shift in attitudes more favorable toward diversity when evaluated at the end of the term. Scores for the affective (SC) scale, the behavioral (DC) scale, and the total M-GUDS score were all significantly higher for the inclusive group at the end relative to the beginning of the semester. Although there was no boost in scores for the cognitive (RA) scale, the general pattern of scores for this measure was consistent with other measures.

In contrast with the favorable changes observed for the inclusive group across the semester, there was no reliable change in any score for the control group. The data suggest that changes in openness to diversity for the inclusive group were related to the experiences students had in their inclusive course during the semester. Although students in both the inclusive and the control groups all participated in introductory psychology courses with similar course content, assignments, and activities, there were several key differences in the experiences of the groups that may have contributed to the differential changes in openness to diversity for the inclusive group. Most notably, students in the inclusive group had regular, collaborative interactions with students with intellectual disabilities, while those in the control group did not. These inclusive interactions included regular class lectures, small group discussions, group projects, and weekly forums designed to address issues related to transitioning to college (e.g., meal plans, study skills, time management, and social life).

Participants in the inclusive group experienced more than a learning experience shared with a peer with an intellectual disability. These students were also instructed by faculty who had received training in universal design and best inclusive practices, and who were quite eager to have students with intellectual disabilities as part of their course community from the outset. It is likely that the instructor’s attitude, leadership, and example in the course also impacted students’ perceptions and attitudes over the course of the semester. These instructors were instrumental to the successful inclusion of students with intellectual disabilities, as they differentiated all course material, placed students in small discussion groups to ensure integration across the semester, and facilitated inclusive group projects.

The students with an intellectual disability who enrolled in the psychology courses participated as full members of the class, engaging in class discussions and activities, writing papers, completing projects, and taking exams. Their “equal status” as classmates may have contributed to the positive attitude change observed across the semester. Such a pattern would be consistent with contact theory in suggesting that interaction between individuals with and without disabilities in inclusive settings helps foster nonprejudicial attitudes toward people with intellectual disabilities (e.g., Burns et al., 1999; Carter et al., 2001; Findler & Vardi, 2009; Floyd et al., 2009; Hughes et al., 2002; Krajewski & Flaherty, 2000) and has a positive effect on attitudes about disability in postsecondary settings (e.g., Kitchens & Dukhi, in press; Nevill & White, 2011). For example, in one study, college students who had a close relative with an autism spectrum disorder (ASD) showed greater openness to peers who demonstrated ASD-characteristic behaviors (Nevill & White, 2011). In another study, an administrator reflecting on the consequences of inclusive interactions in postsecondary programs noted, “This is perhaps my greatest lesson from this experience . . . with inclusion, it is not only important for the growth of the individual, but it radically challenges and changes the stereotypes of others” (Howell, 2010). Together, these findings suggest that inclusive experiences may serve to foster more positive attitudes about disability and diversity among college students and overall acceptance of students with differences.

Although a reliable shift in attitudes toward diversity was observed for students who participated in the inclusive college courses, the present findings represent only a first step in our understanding of the impact inclusive postsecondary education may have on college students without disabilities. While participants in this study were drawn from multiple course sections taught across different semesters, all students were enrolled in an introductory psychology course that, by the nature of its content, offered a focus on human behavior. In this course, the types of assignments and activities afforded a high level of student interaction, and instructors in the inclusive group assigned students to different in-class working groups to ensure integration of students with intellectual disabilities among peers without disabilities. It is not clear whether the change in openness to diversity would be observed for college students participating in inclusive courses that focused on different content or employed different kinds of assignments—or if they would be observed in similar courses offered at other colleges.

An additional limitation is that the findings are restricted to female participants. Because of the sex composition of the selected courses, we were only able to assess the impact of an inclusive experience on female college students, and thus further work is needed to understand how inclusion influences attitudes in male college students. Perhaps most significantly, the present data demonstrate a reliable change in attitudes toward diversity across the course of one semester, and it is not clear from the present study whether these attitudinal shifts do endure over time. Furthermore, it cannot be determined from the current data whether these changes will translate into behavioral consequences or continue to be observed in future courses. Other examinations of inclusive coursework suggest that inclusive classroom interactions can lead to genuine friendships among students with and without disabilities (e.g., Casale-Giannola & Wilson Kamens, 2006; Hamill, 2003) and greater comfort for traditional students who interact with students with intellectual disabilities (Causton-Theoharis, Ashby, & DeClouette, 2009). It will be essential to do follow-ups to determine if the attitudinal changes observed here persist beyond the duration of the inclusive experience, and whether the changes in attitude translate into measurable, long-term behavior change.

The implications of these findings hold significance for emerging postsecondary education programs that serve students with intellectual disabilities, particularly with respect to the kinds of academic and social opportunities and interactions they offer. The number of postsecondary educational options for students with intellectual disabilities has proliferated in recent years, with over 200 programs now extant (Grigal, Hart, & Weir, 2012), as has the interest from students and families in accessing these options (e.g., Getzel & Wehman, 2005; Grigal & Neubert, 2004; Hart, Grigal, Sax, Martinez, & Will, 2006). The postsecondary education programs that support students with intel-
lectual disabilities have been classified in three broad categories that include substantially separate or segregated models, mixed or hybrid models, and inclusive or individualized models (e.g., Hart et al., 2006; Hart, Mele-McCarthy, Pasternack, Zimbrich, & Parker, 2004; Neubert & Moon, 2006; Stodden & Whelley, 2004). These various models differ with respect to the level of interaction that students with intellectual disabilities have with students without disabilities in academic, social, and residential aspects of college. For example, a recent study found that across 52 college-based transition programs, only 24% of all students with intellectual disabilities enrolled in postsecondary education programs were taking college classes and that the percentage of students taking college classes was much higher in individualized models (92%) than mixed models (21%) or segregated models (0%) (Papay & Bambara, 2011). Because these programs are so new, little is known about the outcomes for all students impacted, and whether the nature and extent of inclusive opportunities influences those outcomes. The present findings suggest that positive changes in attitudes about diversity among traditional college students may be one promising outcome of programs that offer inclusive academic courses, when those courses incorporate faculty training, emphasize student interaction, and support equal status between students with and without intellectual disabilities. Future research should examine whether these short-term positive attitude changes are associated with enduring changes in beliefs about disabilities, and whether they lead to expanded options for people with intellectual disabilities in other social, employment, and residential arenas.

REFERENCES


