

Running Head: EFFICACY OF THREE DISABILITY-BASED INTERVENTIONS

“It’s Nice to Be Nice:”

Assessing the Efficacy of *Realabilities, A New Puppet Show Musical &
The Realabilities Educational Comic Book Curriculum*

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Abstract

Students with disabilities are not only a more frequent target of negative attitudes in the classroom, but are less accepted, have fewer friends, socialize less often, and report more loneliness than their typical peers. Unfortunately, simply including children with disabilities in the classroom does not ensure that typical children will increase their interest, positive attitudes, and intentions towards individuals with disabilities. More high quality interventions that effectively educate typical children about disabilities are paramount to enhance the attitudes, intentions and interest of typical children in their peers with disabilities. *Realabilities*, a TV Show, Musical and Comic Book Series features five characters with disabilities, who harness their special strengths-associated with their disabilities-to save their school from bullies. Since children with disabilities are two to three times more likely to be bullied than their typical peers (Carter & Spencer, 2016) and since typical middle school students reported being bullied at least once per week (Center for Disease Control, 2015), *Realabilities* intends to tackle crucial and timely issues of the day. The intent of the pilot and follow-up study were to use a pre-post-test design to examine the efficacy of a 45 minute *Realabilities Puppet Show Musical* in enhancing typical children's attitudes and intentions towards children with disabilities. Seventeen after-school students from the Boys' and Girls' Harbor of NY participated in the Pilot Study and 68 fourth and fifth graders from a Jewish Day School in New York City participated in the follow-up intervention. In the third study, 72 third grade students from a Jewish Day School in Brooklyn, NY participated in the full *Realabilities Educational Comic Book Series Intervention*. Following both the Musical and Comic Book Series interventions, participants showed significantly improved behavioral intentions on the Shared Activities Questionnaire (SAQ) and significantly improved cognitive attitudes on the Adjective Checklist (ACL) towards children with disabilities. These findings help support the efficacy of an Extended Contact Model and suggest that programs like these may serve as a useful antidote to counter negative attitudes towards disability.

Keywords

Disabilities, Autism, Knowledge, Attitudes, Intentions.

Highlights

- A puppet show musical appeared to be effective at enhancing kids' sensitivity to disabilities.
- A comic book series educational curriculum appeared effective at enhancing kid's sensitivity to disabilities.
- An extended contact model appeared to be effective at enhancing kids' sensitivity to disabilities.
- Participants showed improved intentions towards children with disabilities following the musical and/or comic book series curriculum.
- Post-musical and/or post-comic book series, participants showed enhanced attitudes towards children with all five forms of disability.

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Introduction

Recent statistics suggest that from 2013-2014, 95% of all children and youth between the ages of 6 and 21, who were served by IDEA, were enrolled in regular schools (National Center for Education Statistics, 2016). Moreover, the number of these students who spent the majority of the school day (80% or more time) in regular education classrooms increased from 33% from 1990-1991 to 62% from 2013-2014 (NCES, 2016). This significant increase in just over a decade, suggests that regular education schools will need to be increasingly well-prepared to accommodate students with disabilities in the classroom.

Research suggests that simply including children with disabilities in the classroom does not ensure that typical children will increase their interest, positive attitudes, intentions and socialization with individuals with disabilities. Rather, high quality interventions that effectively educate typical children about disabilities and encourage children to befriend individuals with disabilities are paramount to enhance attitudes, intentions and socialization of typical children and their peers with disabilities (Silton, 2015; Vignes et al., 2009). Conversely, if programs are not developed to promote acceptance and social integration, then children with disabilities will be less accepted by their typically developing peers in the classroom (Favazza, Phillepson, & Kumar, 2000). Research consistently reveals that students with disabilities are not only a more frequent target of negative attitudes (Nowicki & Sandieson, 2002), but are less accepted, exhibit less social participation, have fewer friends, socialize less often, and report more sentiments of loneliness than their typical peers (Bossaert, Colpin, Pijl & Petry, 2011). Various research studies suggest the importance of having learning standards focus on the development of social skills and social competence skills as opposed to focusing solely on the acquisition of academic competencies like literacy and mathematics (Scott, Little, Kagan & Freelow, 2006; National

Research Council, 2001) in the classroom. Asher and Coie (1990) suggest that peer interactions are critical ingredients for developing social skills during childhood.

Already by preschool, children have an opportunity to form and enhance their repertoire of peer-related social skills (Odom et al., 2006). Unfortunately, even in high quality inclusion programs, there is often a clear separation between typical children and children with disabilities when children's play partner preferences are not predetermined by the instructors' planned activities or program structure (Guralnick, 1999). This aligns closely with research suggesting that children tend to prefer a doll representing a child without a disability as opposed to a doll representing a child with a physical disability to join their play activity (Odom et al., 2006). Since preschool-aged children are already capable of distinguishing a child with a physical disability compared to a typically-abled peer (Diamond, 1994) and since children's experiences in preschool are likely to inform their reasoning about inclusion (Diamond & Stacey, 2000), it is imperative that interventions seek to enhance children's attitudes, intentions and knowledge of disabilities as early and as effectively as possible.

Extended contact

Since even high quality inclusion may cause segregation among typical children and children with disabilities in a classroom, it is instructive to consider other forms of instruction to enhance typical children's understanding, attitudes and intentions towards their peers with disabilities.

The extended contact hypothesis postulates that knowledge that an in-group member has forged a close relationship with an out-group member may promote more positive intergroup attitudes (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Typical children can benefit strongly from extended contact, since it affords them knowledge of individuals with disabilities (the out-group) without the adverse side effect of anxiety that initial, direct contact may introduce (Pettigrew &

Tropp, 2000; Stephan & Stephan, 1985, as cited by Cameron & Rutland, 2006). In other words, extended contact can promote typical children's ("the ingroup) positive attitudes and knowledge of children with disabilities ("the outgroup") typical children before the arrival of children with disabilities into a mainstream classroom. In fact, Favazza and Odom (1997) found that extended contact had a significant, positive effect on outgroup attitude (enhanced attitudes of typical children towards children with disabilities) but not on ingroup attitude (typical children towards typical children). Thus, inducing more positive affect toward a group prior to direct contact could lead to more positive outcomes of actual contact between groups and could reduce the possibility of a "backlash effect" if children experience anxiety during their initial interactions with peers with disabilities (Paoloni et al., 2004).

Similarly, Cameron and Rutland (2006) examined the efficacy of an extended contact prejudice-reduction intervention in improving typical children's attitudes towards children with disabilities in England. The researchers discovered that when group boundaries are maintained and typicality or similarity is emphasized, the extended contact model was more efficacious and led to the greatest change in typical participants' attitudes towards children with disabilities (Cameron & Rutland, 2006). Thus it appears that an Intergroup Extended Contact Model, wherein typical children are informed about the realities of disability through story-telling, role-playing or drama (Campbell et al., 2003) that emphasize the similarities and strengths of their peers with disabilities (Cameron & Rutland, 2006) may be a useful antidote to the increasingly negative relationship between age and attitudes towards target children with disabilities (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004; Bell & Morgan, 2000; Morgan & Wisely, 1996). This aligns with research suggesting that storytime is a naturalistic strategy for providing information about individuals with disabilities since it is typically a part of

kindergarten class routines (Favazaa & Odom, 1997). Moreover, activities like roleplays, drama and storytelling help students begin to comprehend the perspective of victims. Students who empathize with the victims are more likely to support the victims and to disapprove of bullying (Silton, Arucevic, Ruchlin, & Norkus, 2013; Pepler et al., 1993)

Previous Peer Education Programs

A variety of creative peer education programs have been devised over the years in an attempt to enhance typical children's understanding and positive attitudes towards children with disabilities through direct or indirect exposure using storytelling, role-playing or other techniques. One form of storytelling, puppetry, has been discussed as a potential promising approach towards transforming attitudes and knowledge towards disabilities due to its ability to impact large numbers of students and to be relatively low-cost (Bernier, & O'Hare, 2005). Additionally, Trimmingham (2010) suggests that puppetry also boasts a variety of other benefits. The researcher suggests that puppetry has been extremely useful in explicating the etiology of maladjustment in childhood and serves as a valuable therapeutic technique through which groups of children can learn to comprehend the complexities of deviating behaviors and to discover more promising solutions. The researchers also suggest that puppets can allow children to be confronted with an externalization of themselves, wherein their focus can shift away from their closed, inner worlds and can accommodate another to share in their perception of the world (Trimingham, 2010; Woltmann, 1951). Moreover, Felisa Weiss (as cited in Trimmingham, 2010) suggests that "the puppet acts as an intermediary, the projective object that absorbs both the interviewer and interviewee's vectors (Trimingham, 2010; Weiss, 1998). Finally, Schumann suggests that the material nature of his puppets makes the puppets speak for themselves. Thus the

object of the puppet must speak and there is no distortion by the intruding ego of the performer (Trimingham, 2010).

Limited Efficacy of Previous Puppet Show Interventions

Despite the unique benefits of puppetry, previous puppet show interventions have either shown no, minimal or even detrimental impacts on changing typical children's attitudes towards children with disabilities.

Rosenbaum, Armstrong and King (1986) conducted a randomized-factorial-design study to assess the impact of two interventions, 1) A Buddy Program- offering direct exposure to children with disabilities, and 2) The Kids-on-the-Block (KOB) puppet show program-wherein puppets are used to introduce disabilities to enhance typical children's attitudes towards children with special needs. The researchers discovered that while the Buddy Program appeared effective, the KOB Program had no significant impact on any outcomes and actually appeared to diminish the impact of the Buddy Program when used in combination. The researchers suggested that this might be due to the dissonance between the puppets in the KOB intervention and the real-life children with disabilities in the Buddy program. In a later study, Baker (1991) found a short-term positive impact of the KOB intervention on elementary school children's attitudes in third through sixth grades, but there appeared to be minimal long-term effects.

That same year, Thios and Foster (1991) tested the efficacy of the New Friends Program, which utilized life-sized dolls with disabilities to present important information about disabilities three times per week (25 minutes per session) over a three week period. The intervention consisted of four units, including, an introductory unit on differences and similarities, and units on hearing impairment, physical impairment (cerebral palsy) and learning impairment (mental retardation). The researchers found that that the New Friends' Program enhanced attitudes and

increased knowledge of disabilities, but failed to show significant changes in social interaction patterns towards children with disabilities (Thios & Foster, 1991).

In 2014, Dunst conducted a metanalysis of 26 studies which examined the effects of the Kids on the Block (KOB) and/or Count Me In Puppet Shows on elementary school students' attitudes and knowledge of individuals with disabilities. The Kids on the Block (KOB) Puppet Troupe and Count Me In Puppet Troupes present puppets representing children with a physical disability, intellectual disability, visual impairment, and hearing impairment. The forty-five minute puppet shows included scripts for each puppet, which are designed to offer awareness of diverse disabilities, to communicate misconceptions of each child's condition, to provide accurate information concerning each child's abilities and disability and to allow for a fifteen minute question-and-answer session after the completion of the puppet show.

Dunst (2014) reviewed studies which included 5,302 participants in the intervention group and 2,642 student participants in the comparison group. The results revealed that the puppet shows had small to medium effects on changes in participants' knowledge and attitudes towards individuals with disabilities. More specifically, first and second grade students showed more significant changes in attitudes towards children with disabilities after the puppet show than their third through sixth grade peers and that the effects of the puppet show were somewhat diminished over time. Moreover, students showed greater changes in their knowledge about disabilities than in their attitudes towards children with disabilities (Dunst, 2014). Finally, the researcher noted the following study limitations, 1) There was little to no information regarding adherence or fidelity to the puppet show scripts, 2) There was limited or no information regarding the schools or districts where the puppet show was performed, and 3) a lack of description of the backgrounds of and manner in which the puppeteers performed the shows.

Despite these shortcomings, Dunst (2014) suggested that puppet shows could be beneficial for transforming elementary student's knowledge of and attitudes towards individuals with disabilities, at least with respect to their initial exposure to information about individuals with disabilities before misconceptions and misunderstandings are internalized. In addition, he recommended a coupling of puppet shows with in-vivo or real-life, situated interactional opportunities to improve students' knowledge and attitudes towards peers with disabilities beyond those associated with puppet shows.

The *Realabilities Puppet Show Musical* seeks to improve upon the Kids on the Block (KOB) and Count Me In Puppet Show Programs and research by providing real-life, situated interactional opportunities, information about adherence to the puppet show scripts, information regarding the location of the show performance, and a brief description of the puppeteers. *Realabilites* will present new, kid-friendly puppets with disabilities that are openly operated by their users, who are assuming the roles of individuals with disabilities. The Puppet Show Musical also seeks to utilize music to enhance children's understanding, recall and appreciation of their peers with disabilities. Moreover, the researchers in the *Realabilites Puppet Show Musical* intervention are utilizing key valid, reliable and objective quantitative behavioral intention (The Shared Activities Questionnaire [SAQ; Morgan et al., 1996] and cognitive attitudinal (The Adjective Checklist [ACL; Siperstein & Bak, 1980]) Measures to assess the change in participants' perceptions from before and after the Musical intervention.

Measuring the efficacy of *Realabilities, The Puppet Show Musical: A Pilot Study*

Study 1.

Participants

Seventeen students (one second grader [5.9%], four third graders [23.5%], eight fourth graders [47.1%], and four fifth graders [23.5%]) from an After-school Program at the Boys' and Girls' Harbor in Manhattan, NY participated in the *Realabilities Puppet Show Musical Intervention*.

In terms of age, two children were eight (11.8%), seven children were nine (41.2%), and four children were ten (4; 23.5%) and eleven (4; 23.5%). With respect to gender, 14 girls (82.4%) and 3 boys (17.6%) participated in the intervention. The majority of students identified as African American (12; 70.6%), two as Latino (2; 11.8%), two as Other (2; 11.8%) and one as White (1; 5.9%).

Procedure

Participants were recruited from the Boys' and Girls' Harbor of New York in Harlem. The mission of the Boys' and Girls' Harbor is to empower children and their families to actualize into complete and productive citizens in society via education, cultural enrichment and social services. The Harbor seeks to help those from lower-resource homes recognize a promising future and "a world they never imagined." The instructors of the Boys' and Girls' Harbor of New York administered Modified Pre and Post-Test Assessments of the Shared Activities Questionnaire (SAQ; Morgan et al., 1996) and Adjective Checklist (ACL; Siperstein & Bak, 1980) to a random sample of 17 after-school students the day before and the day following viewing *Realabilities, The Puppet Show Musical*. The Puppet Show Musical, based off of the *Realabilities Comic Book Series*, featured Uno, a puppet with Autism, Addy, a puppet with Attention Deficit Hyperactivity Disorder (ADHD), Melody, a puppet with low vision, Seemore, a puppet with hearing impairment and RJ/Rolly, a puppet with physical impairment, who use the

lessons they have learned living with their own disabilities and rise above the bullying they have endured to help their friend Uno, compete in a weighty school math competition. Each character shared a song that delved into his/her struggles, strengths and/or offered encouraging words to his/her fellow peer with a disability. The show benefited from a high level of fidelity since the puppeteers, all undergraduate students at Marymount Manhattan College in New York, NY, adhered closely to the show script.

The researchers conducted Paired Samples T-tests to determine whether or not the sample of afterschool students showed change from pre to post-testing on their cognitive attitudes and behavioral intentions towards children with disabilities following the Puppet Show Musical. In addition, the researchers conducted Independent Samples T-tests to assess whether or not there were notable grade or gender differences in intentions and attitudes towards children with disabilities following the Musical.

Instruments

Modified versions of the following instruments were utilized to assess typical children's behavioral intentions and cognitive attitudes towards hypothetical peers with disabilities.

The Shared Activities Questionnaire (SAQ-Self; Morgan et al., 1996) is a 24-item experimental scale that evaluates the behavioral intentions and interests of a child in engaging in social, academic and recreational activities with a target child with disabilities (Campbell et al., 2004; Morgan et al., 1996; Swaim & Morgan, 2001). The SAQ-Self evaluates an individual's own preferences for engagement in activities with the target child. An abridged eight-item version of the SAQ was used for the *Realabilities* testing to best cater to second through fourth grade elementary school children. The three activity areas of the SAQ-Self Abridged Eight-Item Measure included: *General social* (1. Share games and books with a child with a disability in my

class, 2. Invite a child with a disability to sit with me at lunch, 3. Pick a child with a disability to be my partner for a project); *Academic* (1. Sit with a child who has a disability in class, 2. Be in the same reading group as a child with a disability, 3. Study for a test with a child with a disability); and *Active Recreational* (1. Invite a child who is blind to my house to play, and 2. Invite a child who has a disability to my birthday party). The children rate their interest in engaging with the target child in these activities by circling a (1) smile (denoting yes), (2) a neutral face (denoting maybe), or (3) a frown (denoting no). The rater circles the item that best represents how he/she feels about engaging in an activity with the target child. The scores range from 3 (yes) to 2 (maybe) to 1 (no). A total score and a score for each of the three activity areas may be derived, with higher scores indicating a greater willingness to share in an activity with the target child. The researchers administered The SAQ-Self Abridged Eight-Item Measure for each of the disabilities portrayed in the *Realabilites* programming. The Cronbach alpha ranged from .76 to .87 for Blindness, from .82 to .90 for Deafness, .88 to .93 for Physical Disability, and from .88 to .92 for Autism.

The Adjective Checklist (ACL) (Siperstein & Bak, 1977) is a commonly used measure for examining elementary school children's cognitive attitudes towards individuals with disabilities. It is a checklist composed of 32 adjectives, half of which feature positive values (e.g., smart, neat) and half of which feature negative values (e.g., dumb, sloppy). After reviewing the list of adjectives, the child rater circles which adjectives best describe the target child. To derive a score for the Adjective Checklist, researchers subtract the total negative from the total positive adjectives used and add a constant of 20 (Campbell et al., 2004; Siperstein & Bak, 1977). Scores typically range from 4 to 36, with scores above 20 signifying more positive attitudes and scores

below 20 signifying more negative attitudes. Construct validity for both positive and negative values of the adjectives have been confirmed through factor analysis.

Results

In terms of descriptive statistics, the majority of participants (9; 52.9%) selected Uno, the puppet portraying Autism, as their favorite character. Four participants (4; 23.5%) identified Melody, the character with a visual disability as their favored character. Additionally, three participants selected Addy, the puppet portraying ADHD, as their favorite character. Finally, one participant (1; 5.9%) selected RJ/Rolly, the character presenting with a physical disability, as his/her favorite character.

With respect to principal study results, Paired Sample T-tests revealed that the students reported significantly more positive behavioral intentions (as measured via the Shared Activities Questionnaire [SAQ]) toward physical disabilities on the SAQ Total, $t(15) = -2.689, p < .05$, on the SAQ Academic, $t(12) = -2.623, p < .05$ and on the SAQ Recreational Subtests, $t(12) = -2.663, p < .05$. Moreover, the results indicated that students improved their cognitive attitudes towards children with all five forms of disabilities, Autism, $t(14) = -2.617, p < .05$, Attention Deficit Hyperactivity Disorder (ADHD), $t(14) = -3.921, p < .001$, Visual Impairment, $t(16) = 7.991, p < .001$, Hearing Impairment, $t(15) = -2.739, p < .05$, and Physical Impairment, $t(15) = -3.691, p < .01$ after viewing *Realabilities, The Puppet Show Musical*. All of the Paired T-test results are featured in Table 1.

INSERT TABLE 1 HERE

Principal Conclusions

Thus, the researchers found that the 45 minute *Realabilites Puppet Show Musical* significantly enhanced typical children's behavioral intentions towards children with physical disabilities.

Moreover, the Puppet Show Musical Intervention improved the cognitive attitudes of the participants towards children with all five forms of disability: Autism, Attention Deficit Hyperactivity Disorder (ADHD), visual impairment, hearing impairment, and physical impairment.

Measuring the efficacy of *Realabilities, A New Puppet Musical*

Study 2.

Due to the success of the pilot Musical Intervention, the researchers were encouraged to pursue a follow-up musical intervention with a larger sample of participants. They were also eager to make some revisions to the musical script to delve deeper into the disabilities and to show a more significant rehabilitation of the Musical's bullies through the storyline. They renamed the revised Musical, *Realabilities, A New Puppet Musical*.

Participants

Sixty-eight students (39 fourth graders [57.4%] and 29 fifth graders [42.6%]) from a Jewish Day School in Manhattan, New York participated in the *Realabilities, A New Puppet Musical Intervention*. In terms of age, 30 children were nine (44.1%), 34 children were ten (50.0%), and two children were eleven (2; 2.9%). With respect to gender, 34 girls (50.7%) and 33 boys (49.3%) participated in the intervention. The majority of students identified as White (66; 97.1%), one as African American (1; 1.5%), and one as Asian American (1; 1.5%).

Procedure

Participants were recruited from a Jewish Day School in Manhattan, New York. The fourth and fifth grade teachers at the Jewish Day School administered Modified Pre and Post-Test Assessments of the Shared Activities Questionnaire (SAQ; Morgan et al., 1996) and Adjective Checklist (ACL; Siperstein & Bak, 1980) to 68 students three days before and the day following

the viewing of *Realabilities, A New Puppet Show Musical*. Aligned with the Pilot Musical, The New Puppet Show Musical, based off of the *Realabilities Comic Book Series*, featured Uno, a puppet with Autism, Addy, a puppet with Attention Deficit Hyperactivity Disorder (ADHD), Melody, a puppet with low vision, Seymour, a puppet with hearing impairment and RJ/Rolly, a puppet with physical impairment, who rise beyond the bullying they have endured based on their disabilities and help their friend Uno, compete in a weighty school math competition. Each character shares a song that delves into their struggles, their strengths and/or their encouraging words for a fellow peer with a disability. There was a high level of fidelity in the performance since the puppeteers all adhered closely to the show script.

The researchers conducted Paired Samples T-tests to determine whether or not the fourth and fifth grade students showed change from pre to post-testing on their cognitive attitudes, behavioral intentions towards children with disabilities following the Puppet Show Musical. In addition, the researchers conducted Independent Samples T-tests to assess whether or not there were notable grade or gender differences in intentions and attitudes towards children with disabilities following the Musical.

Instruments

Similar to the aforementioned pilot study, modified versions of the Shared Activities Questionnaire (SAQ-Self, Morgan et al., 1996) and the Adjective Checklist (Siperstein & Bak, 1977) were utilized to assess typical children's behavioral intentions and cognitive attitudes towards hypothetical peers with disabilities.

Results

In terms of descriptive statistics, the majority of participants selected Uno (28; 45.3%), the puppet portraying Autism, and Addy (28; 43.8%), the puppet portraying Attention Deficit

Hyperactivity Disorder (ADHD) as their favorite characters. Five participants (5; 7.8%) identified RJ/Rolly, the puppet presenting with physical disability as their favorite character and finally one participant (1; 1.6%) selected Seemore, the puppet presenting with hearing impairment, and Melody, the puppet presenting with visual impairment as their favorite characters.

With respect to principal study results, Paired Sample T-tests revealed that participants reported significantly more positive behavioral intentions (as measured via the Shared Activities Questionnaire [SAQ]) toward hypothetical peers with Autism on the SAQ Total, $t(62) = -4.115$, $p < .001$, SAQ Academic, $t(66) = -4.363$, $p < .001$, SAQ Social, $t(64) = -3.334$, $p < .001$, and on the SAQ Recreational, $t(66) = -4.157$, $p < .001$. They also showed improved intentions towards hypothetical peers with ADHD on the SAQ Total, $t(59) = -2.264$, $p < .05$, and on the SAQ Academic, $t(65) = -2.074$, $p < .05$. Additionally, participants demonstrated improved intentions towards hypothetical peers with visual impairment on the SAQ Total, $t(60) = -2.753$, $p < .01$, SAQ Academic, $t(60) = -2.479$, $p < .05$, the SAQ Social, $t(66) = -2.347$, $p < .05$, and on the SAQ Recreational, $t(66) = -13.056$, $p < .001$ following the viewing. Finally, the participants showed a significant positive change in behavioral intentions towards hypothetical peers with physical impairment on the SAQ Total, $t(57) = -3.880$, $p < .001$, the SAQ Academic, $t(59) = 4.498$, $p < .001$, the SAQ Social, $t(66) = 3.051$, $p < .01$ and on the SAQ Recreational, $t(66) = -2.553$, $p < .05$. Moreover, the results indicated that students improved their cognitive attitudes towards children with all five forms of disabilities, Autism, $t(67) = -4.571$, $p < .001$, Attention Deficit Hyperactivity Disorder (ADHD), $t(65) = -4.664$, $p < .001$, Visual Impairment, $t(66) = -5.264$, $p < .001$, Hearing Impairment, $t(15) = -6.300$, $p < .001$, and Physical Impairment, $t(67) = -5.288$, $p < .001$. All of the results can be seen in Table 1. Additionally, the participants

significantly enhanced their knowledge about bullying following the Musical intervention, $t(64) = -2.785, p < .01$. Finally, with respect to appeal levels, 56 (90.3%) of participants reported that they'd like to see the Musical again, 55 (87.3%) said they'd like to see it as a TV show and 47 (75%) reported that they'd like to read the *Realabilities* Comic Book Series

INSERT TABLE 2 HERE

Gender Findings

Finally, with regard to gender distinctions, female participants showed more favorable behavioral intentions towards children with visual impairment than their male counterparts on the Pretest SAQ Total, $t(59) = -3.538, p < .001$, and on all three Pre- SAQ subtests, the SAQ Academic, $t(59) = -2.469, p < .05$, the SAQ Social, $t(65) = -3.272, p < .01$ and on the SAQ Recreational, $t(65) = -.7415, p < .01$. Moreover, female participants displayed more favorable behavioral intentions towards children with hearing impairment than their male classmates on the Pretest SAQ Total, $t(60) = -3.107, p < .01$, on the all three Pre- SAQ subtests, SAQ Academic, $t(60) = -3.122, p < .05$, on the SAQ Social, $t(65) = -2.202, p < .05$, and on the SAQ Recreational, $t(64) = -2.255, p < .05$. Female participants also showed more positive behavioral intentions than their male counterparts towards children with visual impairment on the Post- SAQ Total Subtest, $t(63) = -2.713, p < .01$, and on the Post Academic Subtest, $t(64) = -2.374, p < .05$. Finally, female participants displayed more positive intentions towards children with hearing impairment on the Post-SAQ Total, $t(63) = -2.261, p < .05$, on the Post-Academic Subtest, $t(65) = -2.244, p < .05$ and on the Post-Social Subtest, $t(65) = -2.202, p < .05$.

Grade Findings

Finally, with respect to grade findings, fifth graders showed more favorable behavioral intentions towards children with visual impairment than fourth graders on the Pre- SAQ

Recreational Subtest, $t(66) = -2.263$, $p < .05$, on children with hearing impairment on the Pre-SAQ Total, $t(61) = -2.118$, $p < .05$, and on the Pre-SAQ Recreational Subtest, $t(65) = -2.204$, $p < .05$. Additionally, fifth graders showed more favorable intentions towards children with physical disabilities on the Pre-SAQ Total, $t(57) = -1.998$, $p < .05$, on the Pre-SAQ Recreational Subtest, $t(65) = -2.370$, $p < .01$. Moreover, fifth graders showed more favorable intentions towards children with autism on the Pre-SAQ Total, $t(61) = -2.133$, $p < .05$, on the Pre-SAQ Academic, $t(65) = -1.960$, $p < .05$, and on the SAQ Social, $t(63) = -2.328$, $p < .05$. Finally, following the Musical, fifth graders also showed more positive intentions towards children with hearing impairment on the Post-SAQ Deaf Total, $t(64) = -2.253$, $p < .05$.

Principal Conclusions

Thus, the researchers found that the 45 minute *Realabilites, A New Puppet Show Musical* significantly enhanced typical children's behavioral intentions towards children with Autism, ADHD, visual impairment and physical impairment. Moreover, the Puppet Show Musical Intervention improved the cognitive attitudes of the participants towards children with all five forms of disability: Autism, Attention Deficit Hyperactivity Disorder (ADHD), visual impairment, hearing impairment, and physical impairment. In terms of demographics, female participants were more likely to show more favorable behavioral intentions towards children with visual and hearing impairments than their male counterparts and fifth graders were more likely to show positive behavioral intentions towards children with visual impairment, hearing impairment, autism and physical disabilities than their fourth grade counterparts.

Measuring the Efficacy of *The Realabilities Educational Comic Book Series Curriculum*

Study 3.

Due to the success of previous comic book and musical interventions, the researchers were eager to test out the full *Realabilities Educational Comic Book Curriculum* among elementary school children.

Participants

Seventy-two third grade students from a Jewish Day School in Brooklyn, New York participated in the *Realabilities Educational Comic Book Series Intervention*. In terms of age, 68 of the participants were eight (94.4%), three were nine (4.2%) and one participant was seven years old (1.4%). The sample was divided evenly among gender, with 36 (50.7%) male participants and 35 (49.3%) female participants. Regarding race, all of the participants self-identified as White.

Procedure

Third grade participants were recruited from a Jewish Day School in Brooklyn, New York. The third grade teachers distributed a knowledge measure, Modified Pre and Post-Test Assessments of the Shared Activities Questionnaire (SAQ; Morgan et al., 1996) and Adjective Checklist (ACL; Siperstein & Bak, 1980) to the participants the day before the students began the 10 comic book series curriculum and one day following the curriculum. The comic book series shares the principal stories of Uno with Autism, Addy with ADHD, Melody with visual impairment, Seemore with hearing impairment, and Rolly with physical impairment as they harness their special abilities-associated with their disabilities-to rehabilitate bullies and solve mysteries in their school. Along the way, we also meet Dberek with Dyslexia, Lexxy with Down syndrome, Tee with Tourette's syndrome, Venn with Williams' syndrome, and Beat, who stutters. We learn of their struggles and triumphs.

Similar to the aforementioned studies, the researchers conducted Paired Samples T-tests to determine whether or not the third grade students showed change from pre to post-testing on their knowledge, cognitive attitudes, and behavioral intentions towards children with disabilities following the *Realabilities Educational Comic Book Series Curriculum*. Additionally, the researchers conducted Independent Samples T-tests to assess whether there were noteworthy gender differences in intentions and attitudes towards children with disabilities following the comic book series curriculum.

Instruments

Similar to the aforementioned studies, modified versions of the Shared Activities Questionnaire (SAQ-Self, Morgan et al., 1996) and the Adjective Checklist (Siperstein & Bak, 1977) were utilized to assess the potential change in typical children's knowledge, behavioral intentions and cognitive attitudes towards hypothetical peers with disabilities.

Results

In terms of descriptive statistics, the majority of participants selected Uno (32; 45.1%), the character portraying Autism, and Addy (11; 15.5%), the character portraying Attention Deficit Hyperactivity Disorder (ADHD) as their favorite characters. Nine participants (9; 12.7%) identified RJ/Rolly, the character presenting with physical disability and Lexxy, the character presenting with Down syndrome as their favorite characters. The remaining participants selected Melody (4; 5.6%), the character presenting with visual impairment, Beat (3; 4.2%), the character presenting with Stuttering, Dberek (2; 2.8%), the character presenting with Dyslexia and Seemore (1; 1.4%), the character presenting with hearing impairment, as their favorite characters in the *Realabilities* series.

Additionally, participants selected which comic book they most enjoyed. Thirty percent of the participants (21; 30%) identified *The Real Goal*, the comic where the original five

Realabilities characters are introduced as their favorite comic book. A number of participants selected *Math Mania* (13; 18.6%), the comic where Uno competes in a math competition, *Antsy Addy* (12; 17.1%), where Addy competes in a spelling bee, and *Food Fight* (10; 14.3%), where Lexxy solves a cooking conundrum, as their favorite comic books. In addition, a number of participants also selected *Rolly's Rocket* (6; 8.6%), where Rolly participates in a bottle rocket contest and *Principessa* (4; 5.7%), where the *Realabilities* team participates in a Heritage Fair as their favorite comic books. Moreover, participants identified *Seemore Signs* (1; 1.4%), where Seemore becomes enamored with another girl who signs, *Chemistry Craze* (1; 1.4%), where Dberek contributes to the safety of the school Chemistry Lab, and *We've Got the Beat*, where Beat, Tee and Venn dance and perform their way to victory, as their favorite comic books. Finally, over three-quarters (25; 76%) of the participants reported that they would like to purchase the comic book series.

INSERT TABLE 3 HERE

With respect to principal study results, Paired Sample T-tests revealed that participants showed significantly more knowledge about disabilities following the *Realabilities Educational Comic Book Curriculum*, $t(68) = -6.308$, $p < .001$. Participants also displayed significantly improved behavioral intentions towards hypothetical peers with Autism on the SAQ Total, $t(65) = -4.006$, $p < .001$, SAQ Academic, $t(67) = -4.101$, $p < .001$, SAQ Social, $t(66) = -2.982$, $p < .01$, and on the SAQ Recreational, $t(68) = -3.724$, $p < .001$. They also demonstrated improved intentions towards hypothetical peers with visual impairment on the SAQ Total, $t(65) = -3.256$, $p < .01$, SAQ Academic, $t(67) = -3.920$, $p < .001$, and on the SAQ Social, $t(66) = -2.347$, $p < .05$. Additionally, the participants showed a significant positive change in behavioral intentions towards hypothetical peers with hearing impairment on the SAQ Total, $t(62) = -3.007$, $p < .01$,

SAQ Academic, $t(66) = 2.890$, $p < .01$, SAQ Social, $t(65) = -2.444$, $p < .05$ and on the SAQ Recreational, $t(69) = -2.030$, $p < .05$. Finally, the participants showed higher behavioral intentions towards hypothetical peers with physical impairment on the SAQ Total, $t(67) = -3.163$, $p < .01$, SAQ Academic, $t(68) = -4.292$, $p < .001$, on the SAQ Social, $t(66) = -2.347$, $p < .05$ and on the SAQ Recreational, $t(68) = -2.062$, $p < .05$.

In addition, following the *Realabilities Educational Comic Book Curriculum*, participants showed significantly improved cognitive attitudes towards hypothetical peers with all five forms of disabilities, Autism, , $t(69) = -7.101$, $p < .001$, ADHD, , $t(69) = -4.086$, $p < .001$, Visual Impairment, $t(70) = -7.155$, $p < .001$, Hearing Impairment, $t(70) = -3.915$, $p < .001$, and Physical Impairment, $t(70) = -5.024$, $p < .001$.

Gender Findings

Finally, with regard to gender distinctions, female participants showed significantly more prosocial bullying attitudes than their male counterparts both before, $t(68) = -3.009$, $p < .01$ and following, $t(66) = -2.029$, $p < .05$, the *Realabilities Educational Comic Book Series Intervention*.

Principal Conclusions

Thus, the researchers found that the *Realabilities Educational Comic Book Series Curriculum*, consisting of 10 full comic books and two instructional manuals, *The Comic Book Companion* and *The Disabilities in Depth Manual* significantly enhanced typical children's behavioral intentions towards children with Autism, visual impairment, hearing impairment and physical impairment. Moreover, the *Comic Book Series Curriculum* improved the cognitive attitudes of the third grade participants towards children with all five forms of disability: Autism, Attention Deficit Hyperactivity Disorder (ADHD), visual impairment, hearing impairment, and physical impairment. In terms of demographics, female participants were more likely to show more

favorable bullying attitudes both before and following the Educational Comic Book Series Curriculum than their male counterparts.

DISCUSSION

Taken together, participants in both the pilot Musical study, the follow-up Musical study and the Educational Comic Book Series Study demonstrated significant improvements in behavioral intentions and cognitive attitudes towards children with disabilities following the 45 minute musical presentation and the Educational Comic Book Series, respectively. In the pilot study, participants showed significantly improved behavioral intentions towards children with physical disabilities and significantly improved cognitive attitudes towards participants with all five forms of disability: Autism, Attention Deficit Hyperactivity Disorder (ADHD), visual impairment, hearing impairment, and physical impairment. In the principal Musical study, participants showed significantly more favorable behavioral intentions towards children with Autism, ADHD, visual impairment and physical impairment and significantly improved cognitive attitudes towards children with all five forms of disability: Autism, Attention Deficit Hyperactivity Disorder (ADHD), visual impairment, hearing impairment, and physical impairment. Finally, in the full Comic Book Series Intervention, participants displayed significantly improved behavioral intentions towards children with Autism, Visual, Hearing and Physical Impairment and significantly improved cognitive attitudes towards children with all five forms of disability, Autism, Attention Deficit Hyperactivity Disorder (ADHD), visual impairment, hearing impairment, and physical impairment. Moreover, students who participated in the full *Realabilities Educational Comic Book Series Curriculum* showed significantly improved knowledge about disabilities following the intervention.

These findings are unique in that very few previous interventions have been as successful at enhancing the behavioral intentions and cognitive attitudes of typical children towards children with disabilities (Swaim & Morgan, 2001; Morgan & Devine, 1996; Siperstein & Bak, 1980). The study results are also unique since very few interventions have been successful at enhancing older elementary school children's behavioral intentions towards children with disabilities and fifth graders scored even higher on the behavioral intention measure of the Shared Activities Questionnaire (Morgan, 1996) than their fourth grade counterparts. Additionally, these findings do support the efficacy of an Extended Contact Model, wherein typical children successfully learn about the realities of hypothetical peers with disabilities through story-telling and role-playing/drama (Campbell et al., 2003) that focus on the commonalities and strengths of their peers with disabilities (Cameron & Rosenthal, 2006). As noted earlier, this may be a useful antidote to help counter the negative attitudes that older children tend to foster towards children with disabilities (Campbell, Ferguson, Herzinger, Jackson, & Marino, 2004; Bell & Morgan, 2000; Morgan & Wisely, 1996). Hopefully, this will reduce or help eradicate the propensity for bullying and victimization among individuals with disabilities (Carter & Spencer, 2006).

Limitations

Despite the promising findings of *Realabilities*, the researchers hope to address the following two limitations in future iterations of research testing: 1) All of the interventions above measured the self-reported knowledge, attitudes and intentions of typical students towards peers with disabilities rather than assessing their actual behaviors and treatment of children with disabilities 2) There was a singular post-test as opposed to offering additional delayed post-tests to assess if positive changes in attitudes and behaviors persisted over time.

To address the first limitation, future studies will aim to not only evaluate elementary school students' reported knowledge, behavioral intentions and cognitive attitudes towards their peers with disabilities, but to assess their change in behavior towards their peers with disabilities following the *Realabilities* intervention. In order to determine whether changes in attitudes and intention persist over time, the researchers will add a three and/or sixth month post-test delay in order to determine if the *Realabilities Interventions* had lasting effects.

Future Directions

The researchers are currently working on further developing *Realabilities A New Puppet Musical* and a *Realabilities* virtual reality environment is being developed for middle school students, high school students and their school instructors in order to simulate disability and to further expand students' knowledge, positive behavioral intentions and cognitive attitudes towards their peers/pupils with disabilities. These virtual environments will afford users the opportunity to better comprehend and empathize with their peers/pupils with disabilities by briefly accessing their inner worlds through virtual reality equipment. In this manner, the researchers will formulate a comprehensive, hands-on research intervention to enhance knowledge, sensitivity, intentions and attitudes towards children with disabilities at each key developmental time frame (Preschool, Elementary School, Middle and High school) as well as for school instructors to improve their ability to most effectively and sensitively educate their students with disabilities in the classroom.

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Table 1. PILOT- SAQ and ACL Paired Sample T-test Results of Realabilities, The Puppet Show Musical

	SAQ Total		SAQ Academic Subtest		SAQ Social Subtest		SAQ Recreational Subtest		ACL	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Autism (mean ± SD)	18.25± 5.79	19.00 ± 5.33	6.88 ± 2.50	7.13 ± 2.33	6.82± 2.07	7.35± 1.93	4.59± 1.37	4.48± 1.50	6.87± 2.90	8.93± 1.53*
ADHD (mean ± SD)	16.82± 5.23	17.41± 5.82	6.00± 2.00	6.65± 2.37	6.65± 2.11	6.53± 2.37	4.18± 1.51	4.24± 1.60	5.76± 2.95	8.47± 1.37***
Blindness (mean ± SD)	18.50 ± 4.13	19.69 ± 3.79	7.12 ± 1.71	7.75± 1.29	6.81 ± 1.80	7.00 ± 1.75	4.56± 1.15	4.94 ± 1.18	5.94± 2.56	.412± .870
Deafness (mean ± SD)	19.38± 3.63	20.38 ± 3.54	7.44± 1.46	7.81 ± 1.33	6.94± 1.48	7.47 ± 1.62	4.82 ± 1.24	4.94 ± 1.30	7.50± 2.16	9.00± 1.75*
Paraplegia (mean ± SD)	17.23 ± 4.44	20.62 ± 3.38*	6.38 ± 1.89*	7.69 ± 1.80	6.62 ± 1.80	7.69± 1.38	4.23 ± 1.24	5.23 ± .93*	7.00± 2.73	9.06± 1.18**

Asterisks indicate significance of pre- versus post-test results: * $p < .05$, ** $p < 0.01$; *** $p < 0.001$

Table 2. SAQ and ACL Paired Sample T-test Results of Realabilities, A New Puppet Musical

	SAQ Total		SAQ Academic Subtest		SAQ Social Subtest		SAQ Recreational Subtest		ACL	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Autism (mean ± SD)	19.59± 4.10	21.76 ± 3.15***	7.06 ± 1.83	7.96 ± 1.60***	7.43± 1.56	8.14± 1.21***	4.94± 1.18	5.58± .89***	7.78± 2.27	9.15± 1.48***
ADHD (mean ± SD)	20.53± 3.42	21.87± 3.31*	7.50± 1.49	7.98± 1.43*	7.79± 1.42	8.23± 1.30	5.31± 1.09	5.60± .90	7.95± 2.38	9.38± 1.61***
Blindness (mean ± SD)	19.61 ± 3.65	20.79 ± 3.65**	7.03 ± 1.78	7.59± 1.68*	7.39 ± 1.42	7.82 ± 1.63*	5.16± .99	7.82 ± 1.63***	6.85± 2.26	8.25± 1.82***
Deafness (mean ± SD)	20.34± 3.38	20.77 ± 3.46	7.25± 1.67	7.37 ± 1.69	7.63± 1.39	7.63 ± 1.39	5.42 ± .91	5.48 ± .93	7.31± 2.20	9.21± 1.90***
Paraplegia (mean ± SD)	20.00 ± 4.40	22.31 ± 2.84***	7.28 ± 8.40	8.40 ± 1.09***	7.69 ± 1.65	8.30± 1.22***	4.96 ± 1.35	5.46 ± .111***	7.10± 2.65	8.81± 1.91***

Asterisks indicate significance of pre- versus post-test results: * $p < .05$, ** $p < 0.01$; *** $p < 0.001$

Table 3. SAQ and ACL Paired Sample T-test Results of The Realabilities Educational Comic Book Curriculum

	SAQ Total		SAQ Academic Subtest		SAQ Social Subtest		SAQ Recreational Subtest		ACL	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Autism (mean ± SD)	16.98± 4.78	19.45 ± 4.39***	6.15 ± 2.05	7.21 ± 1.88***	6.57± 1.88	7.33± 1.78***	4.25± 1.44	4.93± 1.33***	6.78± 2.52	9.09± 1.97***
ADHD (mean ± SD)	17.21± 4.30	16.99± 4.86	6.20± 1.91	5.84± 2.13	6.63± 1.79	6.75± 1.94	4.39± 1.47	4.52± 1.42	7.16± 2.14	8.40± 2.25***
Blindness (mean ± SD)	17.27 ± 3.64	18.50 ± 3.88***	6.16 ± 1.58	6.91± 1.70***	6.51 ± 1.65	6.90 ± 1.60*	4.51± 1.13	4.63 ± 1.24***	5.62± 2.26	7.86± 2.32***
Deafness (mean ± SD)	17.06± 4.25	18.46 ± 4.11***	5.96± 1.90	6.63 ± 1.89***	6.50± 1.71	4.37 ± 1.34*	4.71 ± 1.33	5.48 ± .93*	6.25± 2.36	6.96± 2.13***
Paraplegia (mean ± SD)	18.04 ± 4.40	19.79 ± 4.37***	6.65 ± 1.87	7.54 ± 1.70***	6.93 ± 1.79	7.38± 1.88	4.50 ± 1.35	4.91 ± 1.39*	7.86± 2.06	8.69± 2.12***

Asterisks indicate significance of pre- versus post-test results: * $p < .05$, ** $p < 0.01$; *** $p < 0.001$