

Chapter 15

Realabilities: The Development of a Research- Based Children's Television Program to Address Disability Awareness and a Stop-Bullying Platform in the Schools

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ABSTRACT

This chapter explores Realabilities, a video-based children's television program featuring unique characters, each with a distinct disability. Beyond utilizing video technology to directly teach cognitive and social-emotional skills to children with autism, Realabilities demonstrates how video can be used to foster positive behavioral intentions and cognitive attitudes towards children with autism and other disabilities. Realabilities also reveals how a video medium can promote a stop bullying platform, especially since children with disabilities are at least two to three times more victimized by bullying than their typical peers. One hundred and sixty-six students from schools in Manhattan, NY, and Baltimore, MD, showed more favorable behavioral intentions and cognitive attitudes towards hypothetical peers with disabilities following a three episode viewing of Realabilities. Finally, Realabilities not only showcases the realities of disabilities but shares the potential strengths that children with disabilities possess. This is particularly illuminating, since the Affect/Effort Theory suggests that children are more motivated to interact with others when they possess positive expectancies of their social interaction partners.

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INTRODUCTION

Realabilities is a video-based children's television program, which features unique characters, each with a distinct disability. Each episode presents a social story that heralds a pro-social anti-bullying message to viewers. Through this multimedia format, episodes of the show serve to enhance the sensitivity and understanding of typically developing children towards children with disabilities. The hope is that engaging typically developing students will foster positive attitudes and behavioral intentions of typical children towards individuals with disabilities.

It is instructive to teach typical children about disabilities that they may encounter at school and in the community in order for them to learn to be mindful and to make the environment as welcoming and safe as possible for their peers with disabilities. By encouraging typical children to be sensitive, take initiative, and engage in appropriate social interactions with children diagnosed with autism and other disorders, children with disabilities may be able to improve upon certain difficult features of their disorders. These relationships could enhance the school environment and ideally promote children with autism's interest and success in social interaction and social initiation as well as typical children's social-emotional intelligence, understanding and sensitivity (Kamps, Kravitz, Gonzalez-Lopez, Kemmerer, Potucek, & Harrell, 1998).

Autism is one of the most common developmental disorders in the United States, with prevalence rates consistently rising over the last 40 years. Currently 1 out of approximately 88 children is being diagnosed with an Autism Spectrum Disorder (ASD) (Autism Speaks, 2013). While there is no known cure for autism, many therapies have been proven to be beneficial in improving the day-to-day life functioning and quality of life of children with ASD and their families (Autism Speaks, 2013). However, one area

that could benefit from greater scrutiny is how to enhance typical children's awareness, sensitivity and understanding towards their peers with ASDs. With the number of ASD diagnoses on the rise, the likelihood of a typically developing child encountering a child with this disorder is high. Providing typical children with the knowledge and tools to appropriately interact with and support their peers with disabilities would be highly beneficial for everyone involved.

Along with autism, there are countless other disabilities that typical children will likely encounter in school and in the community. These disabilities include: deafness, blindness, physical disability, Attention Deficit Hyperactivity Disorder, Down syndrome and others. Despite their limitations, many individuals with special needs possess special abilities and strengths. It is crucial that children who are typically developing appreciate that others with impairments have valuable strengths. Teaching positive behavioral intentions towards individuals with disabilities at a young age, therein fostering increased sensitivity is extremely beneficial in preventing bullying and other poor behaviors as children advance from elementary to junior high school. There is growing evidence that suggests that typical children may be effective agents for inducing change in their peers with developmental disabilities (Pierce & Schreibman, 1997). Research has also shown that without intervention, typically developing peers prefer to interact with one another rather than with children with disabilities (Disalvo & Oswald, 2002; Myles, Simpson, Ormsbee, & Erikson, 1993 & Goldstein, Kaczmarek, & Pennington, 1992). The importance of creating an intervention that encourages typically developing children to engage with their peers with disabilities would be beneficial for both children with disabilities and their typical peers alike.

Our video-based *Realabilities* intervention was designed to create a meaningful medium through which to inspire typical children to be more ac-

cepting and to encourage more positive attitudes and intentions towards their peers with disabilities. Children who view pro-social programs are often more altruistic, and involved in more pro-social behaviors (sharing, cooperation, manners) (Mares, 1996). The video intervention was not only created to promote these behaviors, but to challenge the often negative, pathetic portrayals of children with disabilities on television and to replace them with a focus on the special abilities and strengths that individuals with disabilities possess.

CHILDREN WITH DISABILITIES IN TELEVISION

Research suggests that children with disabilities are more at risk for developing negative attitudes towards television due to their pathetic portrayal on TV, where they are often depicted as sick, pitiful, aggressive or dangerous (Sprafkin, Gadow & Grayson, 1984). Wood (2012) explains that the representation and portrayal of individuals with disabilities on television is poor and progress towards improving the depiction of individuals with disabilities remains slow. A 2005 Skillset report states that there have been small changes in the employment rates of individuals with disabilities in the Broadcast Television sector. Within the media industry, individuals with disabilities account for only 2.3% of the workforce. The under-representation of these individuals within the media workforce strongly relates to how disabilities are portrayed within the media, which can have a negative impact on the public. The media is highly influential and a misrepresentation of individuals with disabilities may have great social implications (Wood, 2012).

Balter (1999) noted that individuals with disabilities remain a marginalized group who are rarely portrayed in a realistic manner on-screen and are rarely cast in primary roles despite expectations of the Americans with Disabilities Act.

Additionally, throughout the years, perceptions of individuals with disabilities remain stagnant and old stereotypes endure despite boons in technology and the participation of individuals with disabilities in sports (Day, 2000). Murphy (1995) stated that, "The greatest impediment to a person taking full part in his society is not his physical flaws, but rather the issue of myths, fears and misunderstandings that society attaches to them" (p. 140) (Hardin, 2001).

A study conducted by Wahl (2007) examined two hundred and sixty-nine hours of videotaped children's television programming and rated them. Nearly half of the viewed programs used mental health terms in which most of the terms were slang and disrespectful (e.g., crazy and nut) and were used to ridicule others. Twenty-one characters with a mental illness were identified, and they were depicted as aggressive and threatening. Other characters responded to these individuals with fear, exclusion, and disrespect. As indicated by this study, children's television programs appear to provide copious opportunities for children to create negative attitudes and behaviors towards individuals with mental illnesses or other disabilities (Wahl, 2007).

AT RISK FOR BULLYING AND STIGMATIZATION

Children tend to be observant, curious and inquisitive by nature. Meeting a peer with a disability or seeing someone with a disability portrayed on television might challenge their current schemas. It is important to teach children about various disabilities so that there is no room in school for misunderstanding or worse: teasing, bullying, and emotional pain (Pepler, 1993). Researchers Wall, Wheaton and Zuver (2009) reported that only ten studies have been conducted in the United States on bullying and disabilities, but each concluded that children with disabilities were two to three

times more likely to be victims of bullying than their typical peers (Holmquist, 2011). Hoover and Stenhjem (2003) suggest how the continued failure of individuals with disabilities to participate in general education classes, mainstream educational clubs and organizations, and athletic programs perpetuates a lack of understanding and interaction among students with and without disabilities. Peer interactions and relationships are critical ingredients for developing social skills during childhood (Asher & Coie, 1990).

Bullying

Realabilities is catered to children between the ages of six and nine. Calvert & Kotler (2003) suggest that young viewers enjoy viewing actors, who are slightly older than they are. Thus, the show is catered to second and third grade children, since the *Realabilities* team members are in fourth and fifth grades (between nine and eleven years of age). Research has shown that 19% of students are bullied in U.S. elementary schools, with rates decreasing in the later school years (Dake, Price, & Telljohann, 2003). Thus, *Realabilities* is targeted to a slightly younger audience (second and third graders) to promote pro-social practices and to prevent negative bullying behaviors before they become commonplace in the classroom.

Olweus (2011) defines bullying as “when a student is being exposed, repeatedly and over time, to negative actions on the part of one or more students... negative actions must occur at least once a week for a month or more.” Bullying can be explained as transpiring secondary to the existence of an imbalance of power. While anyone might be a target of bullying, the following student profiles are at a greater risk of becoming victims of bullying: smaller students, students with disabilities and mental health problems, and students who are lesbian, gay, bisexual, transgender and questioning (LGBTQ) (Lieberman & Cowan, 2011). Children who are bullied

often experience a variety of symptoms, including: bedwetting, difficulty sleeping, depression, low self-esteem, and discontentment at school (Kim & Leventhal, 2008). All forms of bullying and peer victimization are clear risk factors for depression and suicidal ideation but the specific groups mentioned are at a higher risk. According to the Center for Disease Control (CDC)'s Youth Risk Behavior Surveillance of 2011, bullying was associated with one of the leading causes of death among persons aged 10–24 years in the United States. It was reported that 20.1% have been bullied on school property, and 7.8% of those who have been victimized by bullying, have attempted suicide (Eaton et al., 2012).

Results from a review of eleven international studies indicated that students with disabilities, both visible and non-visible, were more victimized by bullying than their typical peers. The visible disabilities examined were cerebral palsy, muscular dystrophy and spina bifida, whereas the non-visible disabilities included ADHD and other learning disorders. Results indicated that the frequency with which students with disabilities, were being bullied was statistically significant compared to students without disabilities (Carter & Spencer, 2006). These students also reported having fewer friendships than their classmates, and 45% were moderately or severely victimized. Carter and Spencer (2006) intimate that classmates may be biased towards their peers with disabilities or towards children whom, in general, differ in appearance. These students struggle with a poor peer status and have fewer friends; making them more vulnerable to victimization.

Pepler et al. (1993) organized an anti-bullying intervention geared towards teaching students about bullying, specifically how to identify it as well as which actions to take to quell bullying. Activities like role-plays, drama and story-telling helped students begin to understand the perspective of the victim. Students who empathize with the victims are more likely to support them as well as

to disapprove of bullying. *Realabilities* amplifies this message by employing all of these methods (storytelling, role-play and drama) through a video medium to encourage viewers to help prevent or combat bullying in their schools.

Efficacy of Video Technology in Addressing Bullying

Technology can unfortunately facilitate bullying via cyber-bullying (Campbell, 2005), but it can also facilitate anti-bullying efforts by capitalizing on its dissemination capabilities to promote stop bullying messages. In efforts to diminish the amount of bullying, in-vivo and ex-vivo, the use of technology has become a new means of behavioral training for children and adults against bullying and violence. Video technology use in bullying prevention and intervention has become more popular because of its low expense and simple training instructions for teachers and clinicians (Webster-Stratton, Kolpacoff, & Hollinsworth, 1988 as cited in Belnap, 2009).

There are various programs that have been used to help prevent bullying by focusing on its various causes. *Get Real about Violence* is a technology-based program focused on preventing bullying. It is composed of a twelve-course curriculum, which addresses three factors of violence: vulnerability to violence, contributors to violence, and alternatives to violence. Teachers are guided through lesson plans by a packet that consists of teachers' manuals, videos, audiotapes, and other tools (Belnap, 2009). The lessons are administered to children in grades K - 12 to learn about nonaggressive conflict resolution. This curriculum encourages students to actively participate before an argument progresses to a fight or confusion leads to bullying. The researchers demonstrated that aggressive communication is a prelude to bullying behaviors and reported that the intervention was instrumental in reducing verbal aggression (Meyer et al., 2004). *Get Real about Violence* is a preventative

approach teachers can use to educate students so that there is less aggression, fewer conflicts, and as a result, less bullying.

Another focus in anti-bullying studies involving technology relates to the bystander effect, or the "good Samaritan effect" and heroism. Rather than focusing solely on the perpetrators of bullying, it is instructive to consider the heroes, who aid victims of bullying or who assume other heroic roles. It is possible that there is a banality of heroism just as there is a banality of evil. In other words, each individual has the potential to do a heroic deed. The concept that there is a banality of heroism can be a helpful tool in teaching people how to evaluate conflicts which they witness, and how to act righteously to end them, at the time (Franco & Zimbardo, 2006-2007). In a study conducted in 2013 in the United Kingdom, the various conditions needed for bystanders to help others during a violent conflict were tested. Researchers used virtual reality technology to test 40 soccer supporters of the Arsenal Football Club in England to determine if they would help victims of confrontation of the same supporting team or victims of confrontation who supported a different team. The results showed that there was a significantly greater number of "heroes" when the supporter of the same team was in need of help than when a victim of another team needed assistance (Slater, Rovira, Southern, Swapp, & Zhang, 2013). By using technology, it was easy to control what the volunteers were seeing in order to merit results. Without technology, the researchers would have had to gather many more volunteers and actors to role-play an argument or a fighting scene which would inevitably involve more subjectivity and thus make it harder to uncover significant results.

Video media animation was selected as the medium for *Realabilities* since "stop bullying" is a key platform of the show and a video medium is often popular among children. Animation can often make stories more appealing and entertaining for children. Rieber (1991) discovered that

fourth-grade students were capable of acquiring knowledge through incidental learning from a computer simulation of animated shapes. Seventy-four graders were tested to see if they could gather information learned incidentally. The students participated in an animated lesson on Newton's laws of motion and were able to understand a complex science principle through incidental learning. Children were also more likely to prefer the technological method of learning than to return to a more traditional method when given a choice (Rieber, 1991).

Over the course of numerous animated episodes of *Realabilities*, certain productive behaviors are shown to viewers through depicting realistic situations in elementary school such as during soccer practice, during spelling bees, school plays and at a heritage fair. By providing an example of how to behave in a bullying situation via this multi-sensory medium, children can more easily generalize and apply what they see and hear on-screen to their in-vivo life situations. Technology has shown itself to optimize this process since it seems to heighten children's interest in the programming and therefore to motivate their investment in this important platform. By capitalizing on technology to promote awareness of bullying and to demonstrate how to prevent it, important pro-social behaviors and alternatives to bullying behaviors are taught.

EDUCATIONAL PROGRAMMING AND VIDEO MODELING

Children's educational programming is a critical area of study in child development. A video tool which can build social skills development into its programming and offer a greater visibility of autism in children's educational programming may help children and society at large to better understand and optimally interact with children on the autism spectrum. These outcomes would both directly and indirectly alleviate some of the undue

burdens and associated stress levels with which children with autism and their families contend.

Another benefit to consider in utilizing a video-based medium like *Realabilities* is that children's educational programming is one mass-media vehicle through which to teach key social skills to children with autism. Video tools are uniquely beneficial for children on the autism spectrum due to their anecdotal interests in TV and video mediums, to the success of video modeling (Charlop-Christy, 2000) for teaching various socialization and adaptive skills and to their great dissemination capabilities. Bellini & Akullian (2007) conducted a meta-analysis that examined intervention, maintenance and generalization effects of video modeling and video self-modeling interventions based upon three dependent variables: social-communication skills, functional skills, and behavioral functioning. Results demonstrated that individuals were capable of acquiring key skills after watching a video of an individual performing a task, communicating or behaving in a specific way. The skills acquired via video modeling and video self-modeling, more importantly are maintained over time and transferred across persons and settings (Bellini & Akullian, 2007). Bandura (1997) noted that children acquire a vast array of skills by observing others perform skills rather than through personal experiences. Therefore, observers will imitate behaviors with or without the presence of reinforcement.

Thus, a video medium can be used to teach social skills to children with ASD while also serving as a medium through which to reduce stigmatization by teaching the importance of sensitivity and positive behavioral intentionality. Knowledge and sensitivity training regarding children with disabilities would be useful for parents of children with autism and other less visible disabilities, since efforts towards social integration are critical for the healthy social-emotional development of typically developing peers and their peers with disabilities.

LITERATURE AND DISABILITIES

It is instructive to measure the degree to which typical peers tend to accept their peers with disabilities in integrated classrooms and to create an intervention tool that can help increase their knowledge and acceptance in a positive way. Smith-D'Arezzo and Moore-Thomas (2010) used the medium of literature to instill a sense of empathy towards those who face discrimination or other hardships. The researchers presented children's books which featured characters with disabilities to test fifth graders' perceptions of their peers with disabilities. Two books, each exhibiting a main character with a learning disability, were read to the children in a structured book discussion group. While the results were intended to improve children's attitudes towards the characters with disabilities, few positive results were recorded. In fact, the book intervention appeared to have a negative impact, reinforcing some of the poor views children have toward their peers with disabilities. One study explored the portrayal of disabilities within a sample of literature catered to primary-age children in the United Kingdom (Beckett, Ellison, Barrett, & Shah, 2010). It was hypothesized that the type of literature that children are exposed to is likely to influence their general perceptions of their daily lives. Therefore, it is essential to understand how disabilities are portrayed in the literature. The researchers discovered that despite the positive examples of inclusive literature, discriminatory language and negative stereotypes about disabilities continue to exist in children's books (Beckett et al., 2010). While using literature can have its advantages, it is clear that a different medium could be more effective in harnessing and disseminating positive feelings in typically developing children towards children with disabilities. Video technology can be used as an intervention tool that may produce these desired results; capturing the attention of children while educating them on the need to be accepting and understanding towards their peers with disabilities.

ASSESSMENT CONSTRUCTS OF BEHAVIORAL INTENTIONS AND COGNITIVE ATTITUDES

Researchers have attempted to enhance typical children's behavioral and cognitive attitudes towards their peers with disabilities and, as noted in the literature, this was ineffective. It is important to understand the assessment constructs of behavioral intentions and cognitive attitudes in order to better comprehend how to best improve the beliefs and actions of typical children. The affective component of attitudes that typical children have in perceiving their peers with disabilities involves statements about the individual child's feelings toward a target child with disabilities (Campbell et al., 2006). For instance, "I would be afraid of a new child with autism in my class" (Rosenbaum et al., 1988). The behavioral component encompasses statements of intention in choosing whether or not to interact with a child with a disability. An example of a behavioral attitude would be, "I would sit next to a child with autism during lunch" (Gottlieb, 1977; Rosenbaum et al., 1986a, 1986b; Swaim and Morgan, 2001). The cognitive aspect of intentions relates to a child's belief system about a child with a disability. It could pertain to the child's feelings or to a strength that he/she possesses. Examples include: "I think a child with autism is sad," or "Children with autism are good at reading."

According to a study conducted to determine parents' perceptions of attitudes towards their child with autism, it was concluded that parents felt their child was often portrayed in a negative light. Gray (1993) explains that often parents felt this negativity was due to the general public's failure to understand autism. Children with disabilities are frequently met with hostility and insensitivity. Along with a general lack of knowledge, parents felt that the community judged their children based on the way their children appeared. Most children with autism display disruptive behaviors that make them stand out relative to their typical

peers. With the prevalence of autism increasing annually (Autism Speaks, 2013), the likelihood of individuals encountering an individual with autism is high. Providing information about autism and other disabilities through an effective medium to the public may have the capacity to increase positive attitudes and intentions towards individuals with disabilities.

VIDEO AND DISABILITIES

Swaim and Morgan (2001) capitalized on a video medium to help typical children visualize the differences in behavior of a typical child and a child on the autism spectrum. Typical children in third and sixth grades were shown a series of videos showcasing a child without autism, with autism, or a child on the autism spectrum with information about his disorder. The videos afforded typical children the opportunity to hear the unique speech of a child with autism and to visualize nonverbal cues that are often associated with autism spectrum disorders. The goal was to see if children rated their feelings about the child differently based on the information they did or did not receive. This study aimed to examine the factors that could potentially influence typical children's cognitive attitudes and behavioral intentions toward a peer with autism. Unfortunately the study results did not indicate a positive impact of the informational video on typical children's behavioral attitudes or their cognitive intentions towards the hypothetical peer presenting with autism. This type of video intervention, with short video clips, was ultimately ineffective at improving intentions and attitudes. Unfortunately, various other video-based interventions, which offered descriptive information about individuals with disabilities, have proven harmful, neutral or minimally helpful at enhancing behavioral intentions and cognitive attitudes towards individuals with disabilities. As per Heider's (1958) cognitive consistency theory,

descriptive information provides knowledge about similarities between a child with a disability and typical peers. The idea is that typical peers will learn to be more accepting and socially interested in their peer with a disability if they appear to be similar to their typical peers.

Campbell et al. (2004) added explanatory information to descriptive information to determine if explanatory information would create more positive intentions and attitudes of typical peers towards their peers with autism. Explanatory information provides causal information about the disorder at-hand (Kelley, 1967; Heider, 1958). This addition of explanatory information assumes that typical peers will become more accepting and demonstrate greater positive intentions towards children with autism if they feel that children with autism have little responsibility for their disorder (Juvonen, 1992). Typical peers were more likely to display anger and negative intentions towards their peers with autism if they attributed high levels of responsibility to their peers with autism. Campbell et al. (2004) found that the addition of explanatory information to descriptive information increased positive attitudes of younger typical children (third and fourth graders) towards children with autism. Older children (fifth graders) did not demonstrate significant increases in positive behavioral intentions towards individuals with autism following the video intervention. These findings correspond to studies that suggest that cognitive attitudes towards peers with disabilities become more negative as children grow older (Ryan, 1981).

In order to improve upon these previous interventions, Silton (2009) randomly assigned typical elementary school children to one of four video conditions: Descriptive and Explanatory information about autism, Descriptive, Explanatory and Peer Strategies Information about autism, Descriptive, Explanatory, and Strengths Information about autism, or to a video featuring all four forms of the aforementioned types of information. The inclusion of peer strategy information was

based on the Social Learning Theory (Bandura, 1977), which suggests that individuals will learn behaviors if they are properly modeled and reinforced (Rosenthal, 1963). The inclusion of strengths information is based on affect/effect theory (Rosenthal, 1989), which posits that expectations influence an individual's affect and the amount of effort he/she puts forth. When a child is presented with a negative expectation of a social interaction partner, he/she makes less of an effort to interact, and is less friendly towards the social interaction partner, even if the social partner does not possess significant emotional or behavioral issues (Disalvo & Oswald, 2002; Harris, Milich, Corbitt; Hoover & Brady, 1992). However, if typical children are presented with positive strengths information about children with disabilities, they may have more positive expectancies of children with disabilities, and may thus take a more active social interest in them. When a typical child learns about the special strengths or abilities of a peer with disabilities, the typical child can focus on the unique strengths of the individual rather than on his/her disability. Silton's (2009) study suggested that the addition of peer strategies information was useful in enhancing typical children's behavioral intentions, while strengths information was more helpful at enhancing typical children's knowledge of autism.

Moreover, Silton's (2009) most fascinating incidental finding suggested that the actors who played the roles of children with autism in the video had achieved the greatest improvement in sensitivity and empathy following the filming. Thus, the simulation itself appeared to have a strong impact on enhancing sensitivity levels (Silton, 2009). Video interventions that encourage children to role-play an individual with a disability or the peer of an individual with a disability may be powerful at enhancing the interest and sensitivity of typical elementary and middle-school aged children towards children with autism and other disabilities.

A FOUR-PART CURRICULAR INTERVENTION

Silton (2011) created an additional video that included descriptive, explanatory, peer strategies, and strengths information on four distinct disabilities: autism, blindness, deafness, and paraplegia. The cognitive attitudes and behavioral intentions of the children who played the roles of individuals with disabilities in Silton's (2011) video were also assessed using the Shared Activities Questionnaire (SAQ; Morgan et al. 1996), a behavioral intention measure, as well as the Adjective Checklist (ACL; Siperstein, 1980, Siperstein & Bak, 1977), a cognitive attitude measure. Six actors (one fourth grader, one sixth grader and four eighth graders) from Baltimore, Maryland completed the SAQ and ACL both prior to and following a four-hour simulation of disabilities for the educational disabilities video. Four of the participants were male and two of the participants were female. Consistent with the research hypothesis, the video actors showed improved behavioral intentions towards individuals with disabilities following the video testing. More specifically, the actors were more eager to participate in recreational activities with children with disabilities on the SAQ Recreational ($p < .01$) and showed a trend of increasing interest on the SAQ Total ($p = .055$) following the video simulation. However, contrary to the research hypothesis, the video actors showed a decrease in their cognitive attitude scores on the ACL ($p < .05$) following the video simulation.

Silton's (2011) educational disabilities video was a portion of a four-part curricular intervention designed to bolster the positive expectancies of typical children towards their peers with special needs by portraying the strengths that many children with disabilities possess. Failing to expose typical children to peers with disabilities may prevent them from adequately comprehending such disabilities and may diminish their potential to maximize tolerance and appropriate social

interactions towards individuals with disabilities in and outside of the school environment.

Fifty-four fifth and sixth grade students (26 fifth graders and 28 sixth graders) from a Jewish Day School in Manhattan, New York participated in the four-part curricular intervention over a two-week period, wherein each of the four sessions were 60 minutes in length. The SAQ and ACL were administered prior to the intervention. The students viewed Silton's (2011) video during the first session and then engaged in a simulation museum where students moved from one booth to the next, "trying on" four different disabilities during the second session. Each booth was monitored by an adult in order to ensure fidelity and that the participants were effectively carrying out the simulations. The students participated in the moral dilemma discussion during the third session and they were asked to create an invention that they felt would be beneficial to individuals with disabilities in the fourth and final session. At the end of the fourth session, the students were asked to present their invention and to explain its intended benefits for individuals with disabilities. The students completed the SAQ, ACL and open-ended questions pertaining to which sessions they prized most following the four-part curricular intervention.

Following a pre-post test design, the results of the four-part intervention suggested that twelve-year old participants were significantly less likely than ten and eleven year olds to report an interest in interacting socially and recreationally with individuals with disabilities. This finding is consistent with studies indicating an inverse relationship between age and attitudes (Bell & Morgan, 2000). Additionally, consistent with literature revealing girls' more positive intentions towards peers with disabilities (Friedrich, Morgan, & Devine, 1996), girls in this intervention were more willing to socially engage with children with disabilities than were boys. More importantly,

it was found that the students favored the video portraying all four forms of information and the simulation museum in comparison to the other activity sessions, which is likely due to the fact that technology was utilized (iPad displaying video, music, etc.). By having the children place themselves in the "shoes" of an individual with a disability, they may be more likely to gain more positive behavioral intentions and cognitive attitudes towards their peer with a disability. The notion that technology was favored by the students served as an impetus for *Realabilities*.

Realabilities

As mentioned previously, *Realabilities* is a proposed children's television program, designed to enhance the interest and sensitivity of typical children towards children with disabilities. It is a pro-social, stop-bullying program that features characters with disabilities as principal characters and portrays them in a strong and positive light. *Realabilities* seeks to replace typical negative portrayals of individuals with disabilities on TV with positive, strong depictions of characters with one of the following disabilities: autism, blindness, deafness, paraplegia, and attention-deficit/hyperactivity disorder (ADHD). Rather than solely focusing on the limitations of individuals with these disabilities, the strengths of each of the characters are highlighted and emphasized. The show contains pro-social messages not only to eradicate bullying, but to promote empathy, sharing, cooperation, and helping behaviors. The excitement of each episode derives from the various bullying obstacles the *Realabilities* team must cleverly traverse by creatively harnessing their special abilities. Each episode begins with a scenario where bullying is involved and one of the *Realabilities* team members intervenes and galvanizes his/her other team members to diffuse the situation in a creative, fun and remarkable way.

INTRODUCING STRENGTHS INFORMATION

Realabilities' focus on strengths information was inspired by the aforementioned affect/effect theory (Rosenthal, 1989), the success of Silton's (2009) and (2011) videos, which incorporated strengths information, and the success of an earlier study by Owen & Deschryver (2004), which found that offering strengths and preference information about children with autism coupled with peer strategies information, enhanced the social initiations and responses of both the typical peers and the peers with autism, alike.

The *Realabilities* show introduces five characters with disabilities: Uno (who has autism), Melody (who is visually impaired), Seemore (who is hearing impaired), Rolly (who is wheelchair-bound), Addy (who has ADHD) and Ezra (their typical friend). They all capitalize on their superior abilities to protect their elementary school from bullies.

Research suggests that some children with autism may display savant skills (Iavarone, Patruno, Galeone, Chieffi, & Carlomagno, 2007), enhanced spatial memory (Caron, Mottron, Rainville, Chouinard, 2004) and superior perceptual skills (Mottron, Dawson, Soulieres, Hubert & Burack, 2006). Individuals with hearing impairment may possess enhanced peripheral vision and other visual abilities (Bosworth & Dobkins, 1999), while individuals with visual impairment may exhibit a greater interest in, and/or talent for music than their sighted peers (Matawa, 2009). This reliance on sound by visually impaired individuals and interest in music helps to develop and strengthen their ability to sing, play instruments, and even to demonstrate exceptional pitch, sense of rhythm, and retention of melodies and lyrics. Finally, individuals who are wheelchair-bound often develop greater upper body strength due to exercising those muscles more frequently, which also helps prevent muscle atrophy. Thus, the *Realabilities* characters portray all of these potential strengths

of individuals with disabilities, rather than focusing on their potential limitations. *Realabilities* is designed to encourage typical children (without disabilities) to be more sensitive, interested, and to possess more favorable and positive images of their peers with disabilities. Additionally, it is intended to encourage children with varying disabilities to view themselves in a positive and strong light on the television canvas.

Autism

Uno, the character presenting with autism in *Realabilities*, benefits from special skills in the areas of mathematics and spatial orientation. As previously mentioned, these special abilities relate to the propensity of some children with autism to have savant abilities in math and superior perceptual skills.

Savant Syndrome

Savants are extremely gifted individuals who possess a disability yet prove to be highly skilled in certain areas. Studies show that nearly half of all savants have autism and that 10 percent of individuals with autism show signs of savant abilities (Miller, 1999). A savant is often described as a person "of low intelligence who possesses an unusually high skill in some special tasks like mental arithmetic, remembering dates or numbers, or in performing other rote tasks at a remarkably high level" (Miller, 1999). The most common types of savant skills include calendar calculating, musical ability, artistic talent, memorization, mathematical skills, and mechanical achievement (Cheatham, Rucker, Followay & Edward, 1995). Individuals with autism who possess exceptional rote and visual memory for calendars are often referred to as "Savant Calendrical Calculators." These individuals are capable of identifying with speed the day of the week of any given date (Iavarone, Patruno, Galeone, Chieffi, & Carlomagno, 2007). Furthermore, individuals with autism with "Musical

cal Savant Syndrome," often exhibit outstanding pitch processing and chord disentangling abilities along with an exceptional musical memory. Their ability to discriminate among pitches presented in the form of compound musical stimuli suggests that they may also excel at discriminating among frequencies of pure tones when presented in isolation (Bonnell, Mottron, Peretz, Trudel, & Gallun, 2003). Cheatham et al. (1995) identified the following as potential explanations for savant abilities: hereditary factors, eidetic memory, rote memorization, concrete versus abstract reasoning, sensory deprivation, reinforcement and cerebral dominance. While there is no clear explanation as to why these savant skills develop, evidence suggests that children who are particularly skilled in an area, also tend to be more interested in it, to work harder at it and to begin that activity at an early age (Winner, 2000).

While impairments in communication have been one of the major challenges children with autism encounter, visual memory has been found to be an area of particular strength for children with autism. In addition, children with autism demonstrate superior performance in pitch processing and memory (Caron, Mottron, Rainville, Chouinard, 2004). Children with autism also exhibit remarkable abilities in storage and manipulation components of spatial working memory, as well (Caron, Mottron, Rainville, Chouinard, 2004). This intact working memory is one of the many special abilities many children with autism appear to possess.

Superior Perceptual Abilities

Whatever the origin of savant skills, many of these savant abilities involve exceptional perceptual skills. Whether or not they possess savant skills, the literature suggests that a number of individuals with autism exhibit superior performance in both visual and auditory modalities while completing various cognitive tasks (Mottron, Dawson, Soulieres, Hubert & Burack, 2006). Compared to

typical controls, individuals with autism demonstrated superior performance in lab situations and showed an overall superior perceptual functioning (Mottron et al., 2006). Similarly, Bonnell et al. (2003) discovered that individuals with autism outperformed typically developing controls on a variety of low-level perceptual tasks.

Hearing Impairment

Seemore, the character presenting with a hearing impairment on *Realabilities*, benefits from exceptional visual abilities and perspective-taking. These special abilities derive from various studies which show that visual abilities in individuals with hearing impairment may be improved as a result of auditory deprivation and/ or because individuals who are deaf rely heavily on sign language (Bosworth & Dobkins, 2002). Since children with hearing impairments rely mainly on sign language to communicate with the outside world, signing is said to be responsible for their enhanced visual-cognitive abilities. Other studies note that individuals with hearing impairment may experience functional benefits from enhanced peripheral vision (Bosworth & Dobkins, 1999).

Visual Impairment

Melody, the character presenting with a visual impairment, benefits from special musical ability and from a beautiful voice, with perfect pitch and tone. This special musical ability derives from research that shows that music may play a more pivotal role in the lives of visually impaired children than in the lives of fully-sighted individuals. Therefore, individuals with visual impairment may exhibit a greater interest in, and/or talent for music than their sighted peers (Matawa, 2009). This reliance on sound and interest in music helps to develop and strengthen their ability to sing, play instruments, and even to acquire exceptional pitch, a sense of rhythm, and retention of melodies and lyrics.

Physical Impairment

Rolly, the character presenting with a physical impairment on *Realabilities*, benefits from upper body strength. Rolly's upper body strength derives from research, which suggests that individuals with physical impairments often develop greater upper body strength due to utilizing those muscles more frequently, which also helps prevent muscle atrophy.

Attention-Deficit/Hyperactivity Disorder (ADHD)

Finally, Addy, the character presenting with Attention-deficit/hyperactivity disorder (ADHD), benefits from her creativity and great problem-solving ability. ADHD is a neuropsychiatric disorder with an onset in childhood and affects 3% to 5% of all school-aged children. It is characterized by hyperactivity, inattentiveness, and impulsivity (Durston, 2003). This neurocognitive impairment in being unable to effectively filter stimuli is often the reason that children produce messy and careless work at school, interrupt tasks and are unable to focus attention on a particular task, have frequent shifts in conversation, as well as a difficult time waiting their turn. Addy's heightened creativity relates to studies like those by Healey and Rucklidge (2006), which suggest that children with ADHD display significantly higher levels of creativity. The presence of ADHD in a creative sample was first explored and then the relationship between cognitive functioning and ADHD symptomatology was observed by comparing four distinct groups ranging from 10 to 12 years of age: 1) Twenty-nine children with ADHD with low creativity, 2) twelve creative children with ADHD symptomatology, 3) eighteen creative children without ADHD symptomatology, and 4) thirty controls. Creativity, intelligence, processing speed, reaction time, working memory, and inhibitory control were measured. Results showed that 40% of the creative children displayed clinically

elevated levels of ADHD symptoms (Healey & Rucklidge, 2006). While this connection between ADHD and creativity is still somewhat inconclusive, Carson et al.'s (2003) work on latent inhibition and creativity found that creative achievers had more difficulty filtering out possibly irrelevant information and suggested that this deficit, in combination with a high IQ, may be boosting the creativity of individuals with ADHD.

TESTING THE EFFICACY OF REALABILITIES

This research sought to determine whether viewing three episodes of the video-based *Realabilities* intervention would improve the behavioral intentions and cognitive attitudes of typical children towards children with disabilities. While some interventions have yielded modest improvements in behavioral intentions (Silton, 2009), very few interventions have been successful at enhancing cognitive attitudes (Swaim & Morgan, 2001).

The first three episodes, "The Real Goal", "Chemistry Craze", and "Play Nice" have corresponding storyboards that are displayed on YouTube and on a CD. Modified versions of the Shared Activities Questionnaire (SAQ) and the Adjective Checklist (ACL) were administered to second and third grade students in three elementary schools both before and after viewing these three show storyboards of *Realabilities*.

Participants

One hundred and sixty-six children (75 boys [45.7%] and 89 girls [54.3%]) in second (51.8%; n=86) and third grade (47.6%; n=79) participated in the *Realabilities* television show intervention. Three (1.8%) of the students were 6 years of age, 64 (38.6%) were 7 years of age, 66 (39.8%) were 8 years of age, and 31 (18.7%) were 9 years of age. All students identified themselves as "White," except one self-identified as Latino.

Seventy-nine children (36 boys [45.6%] and 43 girls [54.4%] in second [58.2%; n=46 and third grade [41.8%; n=33]) participated in the television show intervention. were from a Jewish Day School in Manhattan, New York and 87 (39 boys [45.9%] and 46 girls [54.1%] in first [1.1%; n=1], second [46.0%; n=40], and third [52.9%; n=46] of the children were from Jewish Day Schools in Baltimore, Maryland.

Instruments (Pre and Post-Tests)

Modified versions of the Shared Activities Questionnaire (SAQ), a behavioral intention measure, and the Adjective Checklist (ACL), a cognitive attitudinal measure were administered to one hundred and sixty-six elementary school children both prior to and following the viewing of three episodes of *Realabilities*. The children were then debriefed and were encouraged to discuss recommendations they would make for the show (See Table 1).

The Shared Activities Questionnaire (SAQ-Self; Morgan et al., 1996) is a 24-item experimental scale that evaluates the behavioral intentions and interest of a child in engaging in social, academic and recreational activities with a target child (Campbell et al., 2004; Morgan et al., 1996; Swaim & Morgan, 2001). An abridged eight-item version of the SAQ was used for the *Realabilities* testing to best cater to second and third grade

elementary schoolchildren. The SAQ Self evaluates an individual's own preferences for engagement in activities with the target child. 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.

Results: Descriptive Analysis

Forty-six (28.0%) of the students preferred the "Pilot: Real Goal" Episode, 36 (21.3%) preferred "Chemistry Craze", starring Uno, the character with autism and 78 (46.7%) preferred the Play Nice Episode, starring Melody, the character with blindness. Fifty-nine (37.3%) of the students selected Melody, the female character who is visually impaired, as their favorite character in the show. The remaining students selected: Ezra (20.9%; n=33), the male typical character, Seemore (14.6%; n=23), the male character with a hearing impairment, Rolly (13.3%; n=21), the male character with a physical impairment, and Uno (5.1%; n=8), the character with autism, as their favorite characters in the show.

Table 1. *Realabilities* SAQ and ACL results

	Autism	Blindness	Deafness	Paraplegia
SAQ Total	$t(141) = -5.326, p < .001$	$t(149) = -5.393, p < .001$	$t(142) = -3.878, p < .001$	$t(147) = -4.541, p < .001$
SAQ Academic Subtest	$t(142) = -5.327, p < .001$	$t(154) = -6.245, p < .001$	$t(149) = -4.131, p < .001$	$t(152) = -3.395, p < .001$
SAQ Social Subtest	$t(143) = -3.621, p < .001$	$t(153) = -4.398, p < .001$	$t(152) = -3.635, p < .001$	$t(153) = -3.106, p < .01$
SAQ Recreational Subtest	$t(143) = -4.385, p < .001$	$t(153) = -2.343, p < .01$	$t(151) = -1.913, p = .058$	$t(149) = -4.266, p < .001$
ACL	$t(151) = -2.101, p < .001$	$t(156) = -11.719, p < .001$	$t(155) = -10.694, p < .001$	$t(155) = -10.154, p < .001$

Main Analysis

Paired samples t-tests indicated that children reported significantly more positive cognitive attitudes on the Adjective Checklist (ACL) following the three-episode television show intervention. Children reported more positive cognitive attitudes on the ACL towards hypothetical children presenting with blindness, $t(156) = -11.719, p < .001$, deafness, $t(155) = -10.694, p < .001$, physical disability, $t(155) = -10.154, p < .001$ and towards children with autism, $t(151) = -2.101, p < .001$.

Qualitative Analysis

The administration of the post-tests included a qualitative portion wherein students were asked questions such as, "What was your favorite episode?", "Who was your favorite character?", and "Which future episodes and adventures would you recommend for the *Realabilities* team?" There was a largely positive response to these questions, which helped reveal what the young participants truly enjoyed about the show. Their thoughts and ideas for future proposals were unique and revealed their excitement about the subject matter and theme of the show. When asked, "What was your favorite episode and why?" one participant responded, "The Real Goal" because I like helping people," while another remarked, "The Real Goal" because when I played basketball, people were laughing at me". Another participant particularly enjoyed *Chemistry Craze* "because I know some kids have disabilities and they [children with disabilities] are always there for you".

With respect to which character was the students' favorite, many answered Melody, "Because she has a wand," "She sings beautifully", and "is really nice." Some reasons for why Rolly was a favorite were due to the fact that "He's so fast" and "he really believes in himself". Ezra was well liked "because he helps everyone", Uno "because he likes math and is really smart" and Seemore "because he can see into the future." It was noted

that the students focused on the strengths of these characters and on the characters' pro-social interests in helping others and eradicating bullying as the primary reasons for favoring the characters. The students were motivated and enthusiastic in discussing their ideas for future episodes with the research team.

DISCUSSION

Following the three-episode intervention, the participants from three Jewish Day Schools in Manhattan, NY and Baltimore, Maryland showed significantly more favorable cognitive attitudes and behavioral intentions towards hypothetical children presenting with all four forms of disabilities. These findings are especially illuminating, since they are some of the first to show the success of a video intervention in improving cognitive attitudes in addition to behavioral intentions towards children with disabilities. This demonstrates that the use of a video medium was indeed an effective form of technology for enhancing the attitudes and behaviors of typical children towards children with disabilities.

CONCLUSION

Educational videos, as previously discussed, provide opportunities for students to increase their sensitivity towards not only children with autism, but to children with other disabilities as well. It is important that typically developing children receive proper instruction and lessons on how to optimally interact with individuals with disabilities in order to make the environment as safe and as welcoming as possible for children with disabilities. The famous twentieth century philosopher Levinas (1969) discusses the importance of welcoming the vulnerable other. *Realabilities* uses an appealing video medium to welcome the vulnerable other and to increase the

positive expectancies that typical children have of children with disabilities by showcasing the strengths and special abilities of individuals with disabilities. It also attempts to promote empathy by promoting a "stop bullying" agenda in the schools and in society at large.

FUTURE RESEARCH DIRECTIONS

Due to the enhanced cognitive attitudes and behavioral intentions of the students tested, the future for *Realabilities* appears to be promising. A total of ten episodes of *Realabilities* have been scripted; each challenging the *Realabilities* team to harness their special abilities in order to combat bullying and to help their fellow students solve challenging dilemmas. These episodes are in the process of being animated in order to bring the show to life. Two comic books or graphic novel versions of the show have already been created to align with the animated episodes. We intend to conduct additional formative research to determine whether the animation, the graphic novels or the two mediums in combination are most efficacious in enhancing attitudes, behaviors and stop bullying sentiments. It is expected that testing the efficacy of the fully animated episodes and comic books of *Realabilities* will affect even greater change among our young viewers, since these modalities will be more appealing and clear means of communicating pro-social messages and values. All students will receive the pre and post-test behavioral intention, cognitive attitude and bullying questionnaires, and they will be divided into four experimental conditions: 1.) Those who will only view the *Realabilities* animated episode, 2.) Those who will only read the *Realabilities* comic book, 3.) Those who will both view the animated episode and read the comic book respectively, and 4.) Those will view the episode, read the comic book and participate in a brief instructional classroom

activity pertaining to the episode. The results will help delineate which method is most effective at improving typical children's intentions, attitudes, and bullying behaviors. This effort would contribute greatly to the developmental, education and disability literature and would most importantly, improve the lives of children with disabilities.

A website has also been created for the show that displays information on the characters, the episodes, and on the research process and preliminary study results. This enables viewers to look beyond the show and understand the premise in a more didactic way. Each episode has a theme and teaches a key moral lesson; with the aid of teachers, students will be better able to understand the pro-social message that each episode is promoting. More research intends to be carried out with the new animated cartoons and comic books in elementary schools. The long-term goal is to pitch the show to network television or to stream it on Internet portals.

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