EFFECT OF SOURCE OF INFORMATION ON THE INTRODUCTION PROCESS OF A CHILD WITH AUTISM INTO A GENERAL EDUCATION CLASSROOM

by

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(Under the Direction of Jonathan Campbell)

ABSTRACT

This study evaluated the potential effects of different information sources on initial attitudes of typically developing peers toward a child with autism. Participants were 155 boys and 141 girls from 20 regular education classrooms ranging in age from 8 to 13 years. Information was provided from 1 of 5 sources: an actor playing portraying an outside doctor, an actor portraying a mother, an actor portraying a father, the regular education teacher, or a female voice-over on a video. Data were gathered with the Adjective Checklist (Siperstein, 1980; Siperstein & Bak, 1977) and Shared Activities Questionnaire- Short Form (Morgan, Walker, Bieberich, & Bell, 1996). Significantly different reported cognitive and conative attitudes were found across grade and context. Source is important when considering who should present information about a new child with autism to a general education classroom.

INDEX WORDS: Autism, Inclusion, Introduction process

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CHAPTER 1: INTRODUCTION

Autistic disorder is a pervasive developmental disorder that affects one in 1,000 individuals (American Psychiatric Association [APA], 2000). Children with autism display difficulties in the areas of social interaction, communication, and stereotyped behaviors and/or interests (APA, 2000). Further, children with autism frequently have a non-differentiated physical appearance when compared to normally developing children while their behavior may be disruptive and asocial. For example, children with autism may fail to use eye contact, joint attention (i.e., shared visual gaze), or social reciprocity; additionally, children with autism are often observed to body rock and use echolalic speech (i.e., repeating spoken words). Repetitive behaviors and obsessions with a particular topic are also symptoms commonly displayed by individuals with autism. For a formal diagnosis of autism, symptoms must be present prior to the age of three years.

Although prevalence rates of diagnosis are increasing, autism is a relatively rare disorder. In addition, school children have limited accurate information and much misinformation about what defines autism (Campbell et al., 2004). For example, when asked to define autism 3rd through 5th graders responded with responses that varied from "a learning problem" to personality characteristics such as "autonomous" and "altruistic."

Due to this incomplete knowledge in school children, social responses toward a child with autism can be negative and stigmatizing (Gray, 1993). Negative attitudes toward children with autism have become a larger concern beginning in 1975 when the United States Congress passed the Education for All Handicapped Individuals Act, later renamed and reauthorized in

1997 as the Individuals with Disabilities Education Act (IDEA) (Public Law 94-142, 1975). IDEA guarantees all students, regardless of disability, a free and appropriate public education in the least restrictive environment (LRE) possible (Public Law 94-142, 1975). When Public Law 94-142 was passed in 1975, attitudes toward children with disabilities were found to be more negative than those compared to "normal children." For example, Parish, Ohlsen, and Parish (1978) surveyed 131 elementary-aged students, addressing their attitudes toward children with special needs. Parish and colleagues found a hierarchical order of preference with "normal children" being most preferred, followed by "physically handicapped children," followed by "learning disabled children," and finally "emotionally disturbed children." These negative views of disabilities appear to be changing somewhat due to broader exposure to people with disabilities and education regarding these disabilities, but the hierarchical preferences remain the same (Gordon, Tantillo, Feldman, & Perrone, 2004). Similarly, in an early 1990s survey, attitudes toward persons with disabilities were found to have improved in general, although there continued to be significant variability in attitudes toward persons with disabilities (Rees, Spreen, & Harnodek, 1991). For example, persons with mental disabilities were described as "emotional, weak, and suggestible" (Rees, Spreen, & Harnodek, 1991, p. 85)

Smith and Williams (2004) found that children age four to eleven reported more positive opinions of children when the causal origin of their disorder was physically or biologically based in comparison to opinions of children with disorders explained by social-psychological causation. Examples of disorders of physical or biological disorders would include physical disability and blindness. Examples of disorders with social-psychological causation would include attention-deficit hyperactivity disorder and learning disabilities (Smith & Williams, 2004). Many factors, such as perceived causation and previous information about the disability,

influenced the attitude of the perceiver towards a person with a disability. These factors influence the basic context for educating children with disabilities, such as autism, today.

Inclusive Education

One factor that may have impacted the attitudes of typical school children toward students with special needs is the trend toward inclusive education. Inclusion is defined as "any situation that brings children with autism together with their peers for specific educational purposes" (Harris & Handleman, 1997, p. 665). Since the 1990s, inclusion of children with autism in a general education classroom has become a major service alternative for families (Odom, 2000).

Inclusion as an option for educating children with autism has varying levels of support. Some compare the inclusion movement to the civil rights movements of the 50s, 60s, and 70s (Burack et al., 1997). Odom (2000) stated the following points in support of including children with disabilities in regular education preschool settings. First, positive outcomes are reported for children with disabilities and their peers in inclusive settings such as an increase in positive social behavior when participating in inclusive education (Guralnick, Connor, Hammond, Gottman, & Kinnish, 1996). Second, teachers and parents are generally supportive regarding inclusion of children with disabilities. Third, the quality of education for children with or without autism in inclusive general education classrooms is equivalent to the quality of education for not only children with autism in special education classes but also for typically developing children in general education classes (Odom, 2000). In contrast, opponents argue against inclusion based on the belief that inclusion fails to address individual needs, instead only focusing on ethical and moral viewpoints. Specifically, placement in an inclusive classroom alone does not result in successful education of the child with autism (Burack et al., 1997). It

appears that inclusion is a complex and individualized process that must be tailored to each child's strengths and weaknesses.

Impression Formation and Social Persuasion

As inclusion is becoming more popular for children with autism in American education, it is important to consider and monitor the actual inclusion process for a child with autism into a general education classroom. This process raises questions of how impressions are formed about children with autism as well as questions regarding how attitudes are changed.

Attitudes, as defined by G. W. Allport (1935), are "a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related" (p. 810). The definition of attitude can be broken down even further into three categorical areas: affective, behavioral, and cognitive information (the "ABCs" of attitudes). The affective component consist of a persons positive and negative evaluations toward the object. The behavioral component consists of the behavioral response the person has towards the object, and the cognitive component consists of the thoughts a person has towards an object. These thoughts can include facts, knowledge, and belief (Taylor, Peplau, & Sears, 2000). Each of these three areas of attitudes is important to understand when considering attitude formation.

One of the first steps of the inclusion process is the introduction of the new child with autism to his or her typical classmates; therefore, it is important to consider how students form initial impressions of an unfamiliar child with autism. A second and equally important step in the actual inclusion process is documenting opportunities for altering potentially negative attitudes of typical children toward a new classmate with autism. Thus, theories of impression formation and of social persuasion may be applied to the understanding of successful inclusion.

Theory of Impression Formation

Impression formation occurs on a "continuum from category-based to attribute-based processing" (Fiske & Neuberg, 1990, p. 4). Category-based processing is present when the perceiver first tries to "fit" the new person into a pre-existing category. If the target person fits easily into the category and no further interest is taken in the person, the perceiver maintains the person in the category. An example of category-based processing is stereotyping. However, if there is contradictory information or if additional interest is maintained toward the individual, the perceiver will seek out additional information. This information will then be combined with previous knowledge to determine if the target fits into an appropriate category, if the category needs to be modified, or the target initiates a new category. When these processes are involved, the individual engages in attribute-based processing (Fiske & Neuberg, 1990). A typical child meeting a child with autism for the first time may try to "fit" the child with autism into a category of mentally disabled (i.e., category based processing). However, when information about the disability is presented, the typical child may use attribute-based processing to form conclusions regarding the child. Campbell and colleagues (2004) found that information presented to the typically developing child effects attitude formation towards a new child with autism. Fiske and Neuberg's theory of impression formation is useful in understanding why information may alter initial impressions toward a child with autism.

Theory of Social Persuasion

From the perspective of social persuasion theory, attitude change is influenced by four factors: (a) message, (b) target, (c) situation, and (4) source (Taylor, Peplau, & Sears, 2000). Message refers the information provided about the target. The person receiving the information is the target. The broader situational context in which the persuasion occurs is the situation.

Finally, the source is the person providing the information to the target. These four factors contribute to the effectiveness of altering another person's attitudes.

Message.

The information provided during a message can have an important impact on the effectiveness of persuasion. Factors such as the number of arguments in a message and the length of the message are important to its perceived effectiveness. For example, Cacioppo and Petty (1985) found that a larger number of arguments is more effective in changing attitude when the target knows very little about the subject; however, if the target is informed about the target, a shorter, stronger message is more effective.

There is research supporting the notion that education can have a positive effect on attitudes toward mental illness. Corrigan et al., (2001) surveyed community college students regarding their attitudes toward six groups with disabilities: depression, psychosis, cocaine addiction, mental retardation, cancer, and AIDS. The participants were educated about these six groups through discussion and a slide show. Post-test attitude data documented that the participants' attitudes improved toward the psychiatric group (depression, mental retardation, psychosis, and cocaine addiction); however, attitudes did not change toward the group with physical disabilities (AIDS and cancer). One contributing factor to the differential effect of education appeared to be the greater awareness and knowledge base the general public already holds regarding cancer and AIDS. The information presented may not have been novel for the participants, therefore limiting the effect of education on the attitudes toward the AIDS and cancer groups.

Message characteristics have also been found to be important when considering the impact of information on attitude change toward a new child with autism. Campbell, Ferguson,

Herzinger, Jackson, and Marino (2004) found that information explaining autism as a biological disorder coupled with information emphasizing similarities between the child with autism and the typically developing peer resulted in a positive effect on the typical student's perception of the child with autism.

Target.

Age and gender have been found to be moderating variables on the target person's attitudes (i.e., typically developing student) toward a person with disabilities. Campbell et al. (2004) found that girls reported significantly more positive intentions toward interaction with a child with autism when presented with explanatory information when compared to boys. With regard to age, third graders reported more positive behavioral intentions when compared to fifth graders. Interactive effects of grade and gender were also found depending on the type of information provided. This research illustrated that there may be differences in behavioral intentions based on gender and grade.

Rosenbaum, Armstrong, and King (1988) found that parental attitudes also impact child attitudes based on gender. These researchers found that girls shared similar attitudes more often with their mothers than with their fathers; however, boys' attitudes were found to correlate equally with those of both their mothers and fathers.

Contact theory. Contact theory can be helpful in explaining the impact of previous interactions between a typically developing child and a child with autism on attitudes. Contact theory contends that interaction between a child with a disability and the target child will improve attitudes of the target child toward the child with disabilities (Allport, 1954). Students who are educated in inclusive education settings are more likely to have positive attitudes toward children with physical disabilities when compared to those in non-inclusive settings (Tripp,

French, & Sherrill, 1995). Clunies-Ross and O'Meara (1989) applied the ideas of contact theory to attitude modification of general education students towards peers with intellectual disabilities. Through disability simulations, shared projects, and group activities with successful outcomes, contact with peers with disabilities appeared to improve general education students' attitudes toward disabled peers. At a three month follow-up, researchers found that the positive attitude change was maintained (Clunies-Ross & O'Meara, 1989).

Situation.

Within the context of persuasion theory, the contextual situation in which the message is presented should be considered. The target receives the message within a larger context (Taylor, Peplau, & Sears, 2000, p. 158). Factors such as previously developed opinions, knowledge of intent of the speaker, distraction of the target, and previous experience with the topic impact the effectiveness of persuasion.

The situation is also important in considering the context of the activity in which the participant is asked to interact with the target person. In a study by Campbell et al. (2004), attitudes towards a student with autism were assessed in three different domains: Academic, Recreational, and General Social. Each of these three situations has different levels and types of social demands. As defined in Campbell et al. (2004), an academic task would include working on spelling words together or working in a reading group. A recreational task would include going to visit a local zoo or eating at a restaurant with the target child. An example of a General Social task would include inviting the target child to a birthday party.

Source.

The final factor that contributes to the persuasion of a typically developing student's attitudes toward a peer with a disability is the source of the message (Taylor, Peplau, & Sears,

2000). The person providing the information to the target child (i.e., the source) is considered by the target in three areas: (a) likeability, (b) power, and (c) credibility. The first dimension of the persuadability of source is the likeability of the source. In general, research has found that a person is more likely to agree with another person that he or she likes (Roskos-Ewoldsen, & Fazio, 1992). Therefore, if the target person likes the person providing the information, his or her attitudes are more likely to change based on the presented information.

Second, the power attributed to the source has been found to impact the influence of information on attitude change. A source that is considered an expert on the topic being discussed is more persuasive than a nonexpert (Taylor, Peplau, & Sears, 2000). For example, when college students were asked to evaluate nine poems and then given evaluations on those poems, those students who read evaluations by T.S. Eliot, a renowned poet, were more likely to change their opinions in the direction of Eliot than those evaluators that were considered to have little power (Aronson, Turner, & Carlsmith, 1963).

The third factor of source persuadability is credibility. Credibility can be considered in two areas: expertise and trustworthiness. Expertise is defined as "the extent to which a speaker is perceived to be capable of making correct assumptions" (Pornpitakpan, 2004, p. 244). A source that is considered highly-credible by the target has been found to be move effective in persuasion of the target than a source with low credibility. Trustworthiness is the second dimension of credibility. Trustworthiness is defined as the "the degree to which an audience perceives the assertions made by a communicator to be one that the speaker considers to be valid" (Pornpitakpan, 2004, p. 244). Likewise, a source that is considered more trustworthy has been shown to be more persuasive than a source that is perceived to be untrustworthy. When Pornpitakpan (2004) analyzed literature related to this area, trustworthiness and expertise were

found to be equally important in attitude change. According to Yuker (1994), a source such as a friend or family member may be a more persuasive source than one that is distant from the target child.

Videotaped Source. One area of research regarding the effect of source on persuasion is that of the effectiveness of videotaped information in altering subjects' opinions. Short-term positive attitude change in response to information provided via videotape has been documented in a variety of studies (Dolan, Sawyer, & Allen, 1983; Elliott & Byrd, 1983; Westervelt, Brantley, & Ware, 1983). Westervelt, Brantley, and Ware (1983) found that attitude improvement occurred by showing a videotape of physically handicapped children to elementary-aged children. In the research conducted by Dolan and colleagues, attitude change in response to videotaped information about a blind person was compared to attitude change towards a person with another disability. Attitude change towards the blind person was not found to generalize to the other disabilities.

Teacher as Source. The effectiveness of a teacher on changing students' initial attitudes toward an unfamiliar peer has been studied (White, Jones, & Sherman, 1998; White & Jones, 2000). White and Kistner (1992) examined the impact of teacher feedback on peer preference and peer-reported perceptions of a new classmate. White and Kistner (1992) found that feedback from the teacher had a directional and additive effect on students' preference and perceptions of an unfamiliar peer. That is, if the teacher provided positive praise, the reported preference of the peer and perceptions of the peer also improved. Likewise, if the students observed negative feedback being provided by the teacher to an unfamiliar peer, the student's preference for the peer and perception of the peer declined.

Research suggests that teachers do impact the attitudes of students toward their peers and that teachers sometimes do have negative attitudes toward students with autism (White & Kistner, 1992; Odom, 2000). Despite efforts to locate and reference literature explaining the impact of other sources of information on children's attitudes, none could be found that discussed the effectiveness of information from sources other than teachers

Purpose of the Present Study and Hypothesis

Using the framework of social persuasion theory, it is important to consider the message, target, situation, and source of information presented when a student with autism is first entering a general educational classroom.

The purpose of this study is to evaluate the potential effects of information source on initial attitudes of typically developing peers toward a child with autism. Given the findings that the combination of explanatory and descriptive information about a new student with autism has been found to impact the attitudes of nondisabled students (Campbell et al., 2004), this message type was selected and held constant across sources.

Hypothesis for source effect. Based on prior research findings, I predict main effects of source due to characteristics of the source such as likeability, power, and credibility. Due to prior research on teacher's influence, I expect that the teacher will produce the largest source effects on attitudes. I hypothesize that parents would be viewed as likeable and credible, and doctor viewed as credible and authoritative. Videotape was hypothesized to be the least persuasive source among those considered.

Hypothesis for sex effect. Based on prior research findings, I predict a main effect for sex, with girls reporting more positive attitudes versus boys.

Hypothesis for grade effect. Based on prior research findings, I predict interactive

effects between grade and source, with parents being more persuasive for younger students (i.e., third-graders) when compared to older students (i.e., fifth-graders).

CHAPTER 2: METHODS

Participants

Participants were 155 boys (52.36%) and 141 girls (47.64%) from 20 regular education classrooms within five public elementary schools in Northeast Georgia. Ages of the children ranged from 8.42 to 12.42 years (M = 10.21; SD = 0.88). Children's self-identified race was as follows: African-America, 9.8%; Caucasian, 82.8%; Hispanic/ Latino, 4.4%; Asian-American, 0.3%; and Other, 2.3%. Socio-economic information was not collected for each child; however, Georgia Department of Education (2002) data indicated that the sample was comprised of a low socio-economic group as evidenced by the high percentage of students eligible to receive free or reduced-price lunch (Mdn = 50.1%; range 19.5% - 54% for schools). Children were screened regarding prior knowledge of autism and, if had heard of the disorder, were asked to provide a definition of autism. Of the 296 participants, 22 (7.4%) reported having heard of autism; however, none of the 22 children provided a reasonably correct definition of the disorder.

The study was approved by university and school districts' Institutional Review Boards. Children were recruited through a parental informed consent form sent home from school with each eligible child. In order to participate, children also provided assent prior to data collection. Prior to providing assent, children were told that the researchers were interested in "learning what they thought about new children who might be coming to their school." Participation rates across the 20 classrooms ranged from 35.29 – 94.12% (M = 70.39; SD = 19.02) with an overall participation rate of 74.94% (i.e., 296 of 395 possible participants). Participation rates did not

differ across grades, $F(2, 19) = 0.34$, *ns*; however, participation rates differed across conditions, $F(4, 15) = 8.01$, $p<.01$ and schools, $F(4, 15) = 21.23$, $p < .001$.

Procedure

Experimenters worked in two-member teams for data collection. After securing children's assent to participate in the study, the children viewed brief videotaped vignettes used in a recent study of acceptance of children with autism (Swaim & Morgan, 2001). The videotapes consist of short clips of a 12-year-old male actor ("Robby") portraying a child showing symptoms of autistic behaviors, including stereotypic hand movements, body rocking, echolalia, and gaze aversion. Information was provided about Robby, describing similarities between Robby and the audience (i.e., descriptive information) and explaining that Robby's unusual behaviors are due to a biological condition known as autism (i.e., explanatory information). Explanatory and descriptive information were presented by one of five sources. Information was provided by an actor playing the part of a doctor, an actor playing the part of Robby's mother, an actor playing the part of Robby's father, the regular education instructional teacher for the classroom, or a female voice-over on the video. The doctor, mother, father, and teacher source involved "in vivo" presentations to each classroom. Instructions and scripts for videotapes are identical to those used in the Swaim and Morgan (2001) study; refer to Appendix A for a verbatim script of the videotape.

Classrooms were randomly assigned to receive information from five different sources: outside doctor (n = 60, 20.27%); regular education classroom teacher (n = 58, 19.59%); an actor portraying the mother of the child on the videotape (n = 57, 19.26%); an actor portraying the father of the child on the videotape (n = 55, 18.58%); or information from the videotape, read by a female not portrayed in the video (n = 66, 22.30%). The mother and doctor were played by the

author; the father was played by a male professional. All teachers were females. Each classroom of students watched the videotape as a group. Prior to the videotape, the experimenters read the following instructions:

> Turn the page in your booklet so it shows "Watch Videotape." We are going to show you a videotape and then we will ask you to answer some questions about the videotape. Watch the child on the video and listen carefully to what the video says. Do not talk to your neighbor until after we collect your booklets. Does anyone have any questions?

Refer to Appendix A for a verbatim script of the videotape and the presentation of information by one of five sources. After the videotape, children responded to three measures, the Adjective Checklist (ACL) and the Shared Activities Questionnaire (SAQ). One experimenter read all instructions and items to children to insure comprehension while another experimenter walked around the room to answer any questions posed by children. Instructions for completing the measures were as follows:

> Next, turn to the next page of your booklet. Now we would like you to answer some questions about the video you just watched. Please answer the questions honestly. Your answers should be based on how you feel and not how your best friend or your neighbor feels. Your answers are private and will not be seen by your friends, teacher, or parents. I am going to read the directions and questions to you. Please follow along with me and don't get ahead of the group. If you need something repeated or have any questions, raise your hand. Do you have any questions before we begin?

Measures

The Adjective Checklist (ACL). The ACL, a measure of cognitive attitudes (Siperstein, 1980; Siperstein & Bak, 1977) has been used extensively in research that examines elementary school children's attitudes toward children with handicaps. The measure lists 32 adjectives; 16 adjectives have a positive valence (e.g., smart; neat) and 16 adjectives have a negative valence (e.g., dumb; sloppy). Children were instructed to circle all adjectives that best described the child portrayed in the videotape. The ACL is scored by subtracting the total number of negative

adjectives endorsed from the total number of positive adjectives endorsed and adding a constant of 20 (Siperstein & Bak, 1977). Internal consistency reliability for the ACL ranges from .81 to .91 (Siperstein, 1980; Swaim & Morgan, 2001).

Shared Activities Questionnaire (SAQ-SF). The Shared Activities Questionnaire (SAQ) is a 24-item experimental scale developed to assess conative attitudes of children, that is, the willingness of elementary school children to engage in social, academic, and recreational activities with a target child (Morgan, Walker, Bieberich, & Bell, 1996). The SAQ consists of 24 items grouped according to activity areas: General Social (e.g., "Be good friends with [target child] at school."), Academic (e.g., "Study spelling words with [target child] at school."), and Recreational (e.g., "Go to the movies with [target child]."). The SAQ yields a total score and three scores for each activity area derived from a principal components factor analysis (Morgan et al., 1996). The SAQ shows good internal consistency reliability, as measured by Cronbach's alpha coefficient, for the total score (.95) and the three factor scores (.87 for Academic, .88 for General Social, and .90 for Recreational) (Morgan et al., 1996). In the present investigation, a 12-item short form of the SAQ was used (i.e., four items per scale), consisting of items that showed the strongest factor loadings for the three SAQ factors (Campbell et al., 2004). Cronbach's alpha coefficients for the SAQ- SF were .94 for the total score, .84 for Academic, .85 for General Social, and .86 for Recreational.

Data analysis

ACL data were analyzed using a 5 (Source) X 2 (Sex) X 3 (Grade) factorial analysis of variance (ANOVA). Main effects and all possible interactions were tested using F test. Means were compared in follow-up testing using Bonferroni correction to protect against alpha inflation. SAQ-SF data were analyzed using a 5 (Source) X 2 (Sex) X 3 (Grade) multivariate

analysis of variance (MANOVA) with SAQ-SF Total, Academic, Social, and Recreation scores identified as dependent variables. Multivariate main effects and all possible interactions were tested using Wilks' ? and associated F tests of significance. Significant multivariate tests were followed by univariate F tests of significance. In the cases where ACL and SAQ-SF variances were unequal for contrasts groups, a Welch F test (F_w) was used to test for overall mean differences and Dunnett's T3 test was used for post-hoc mean comparisons (Myers & Well, 2003).

CHAPTER 3: RESULTS

Across five experimental conditions, $?^2$ analyses revealed no significant differences with regard to gender, grade, or age (see Table 3.1). Subjects were not significantly different based on the source providing the information in the areas of gender, grade, or age. Given the differences between the conditions for rates of participation, five Pearson's correlation coefficients for participation rates and the five dependent variables were calculated to determine if this should be identified as a covariate. The Pearson's correlation coefficients *r*s (294) ranged from -.04 and .05, ns (two-tailed); therefore, participation rates were not used as a covariate.

Behavioral attitudes toward an unfamiliar child with autism based on source

The ANOVA resulted in a significant Source X Gender interaction, $F(4, 266) = 2.67$, $p < .05$, and a significant Source X Grade interaction, $F(8, 266) = 4.51$, $p < .01$; no other significant effects or interactions were observed.

Effects related to sex. Mean and standard deviations for children's scores on the ACL are reported in Table 3.2. Boys, $F(4, 150) = 0.28$, *ns*, and girls, $F(4, 140) = 1.75$, *ns*, were not found to differ significantly. Contrasts between gender for the five sources yielded significant effects for gender for the videotape condition, $F(1, 64) = 11.86$, $p < .01$. There were no other significant differences due to source based on gender. Girls responded more positively than boys after viewing the videotape condition.

Effects related to grade. Means and standard deviations for children's scores on the ACL are reported in Table 3.2. Effect of source was found to differ significantly based on grade between third and fourth graders. Fifth graders responded more positively when compared to

third graders in the teacher condition, $F_w(2, 30) = 3.69$, $p < .05$. In addition, fifth graders were also found to respond with more positive attitudes in the father condition, $F(2, 55) = 5.00$, $p < .01$. No other source differences within grade were found to be significant. Contrasts between scores for fifth graders yielded significant differences $F(4, 105) = 5.37$, $p < .01$, while no source effects were observed for third graders $F(4, 80) = 1.30$, *ns*, or fourth graders $F_w (4, 44) = 1.75$, *ns*. Fifth graders responded more positively to teacher-delivered information when compared to mother-and father-delivered information. When the assumption of homogeneity of variance was violated in univariate *F* tests, Welch *F* was used with Dunnett's T3 post-hoc test.

Cognitive attitude based on source toward an unfamiliar child with autism

A MANOVA was conducted to consider the cognitive attitudes of children based on the source of information. The MANOVA resulted in significant multivariate effects for the Source by Grade interaction, Wilks ? = 0.83, $F(24,766) = 2.17$, $p < .01$. Follow-up multivariate tests of the significant Source by Grade interaction reveals significant effects for the SAQ-SF Total, $F(8, 266) = 4.34$, $p < .01$, Academic, $F(8, 266) = 4.29$, $p < .01$, Social, $F(8, 266) = 2.87$, $p < .01$, and Recreational, $F(8, 266) = 3.94$, $p < .01$. Means and standard deviations for SAQ-SF are presented in Table 3.3.

Post-hoc tests were conducted to examine the effects of source within grade. No significant effects were found for the third grade participants, all F_w values < 2.55, *ns*. Significant effects of source were found in fourth graders' responding [$F(4,96) = 2.83$, $p < .05$ for SAQ-SF Total; $F(4, 96) = 2.47$, $p < .05$ for SAQ-SF Recreational]. Fourth graders responded with significantly more positive behavioral attitudes when presented information by the teacher when compared to the outside doctor. In addition, fourth graders responded significantly more positively towards Recreational tasks when the source was the teacher compared to the outside

doctor. Fifth graders responses were also significant [all SAQ-SF *F*-values exceeded 5.79, $p < .001$]. Fifth graders reported less willingness to engage in activities when mother presented information versus: (a) videotape, for SAQ-SF Total, Academic, and Recreational scores, (b) teacher, all SAQ-SF scores, and (c) doctor, for SAQ-SF Total, Social, and Recreational scores. Fifth graders also reported less willingness to engage in activities when father presented information versus the teacher (SAQ-SF Total, Academic, and Recreational scores).

In addition, post-hoc analyses were completed to consider the effect of grade within source. All sources except for the videotape were found to have significant effect of grade within source [teacher; $F_w(2, 30) = 3.84$, $p < .05$, for Academic scores; mother; all SAQ-SF F_w values exceeded 10.30, $p < .001$; father; $F_w(2, 26) = 3.94$, $p < .05$, for Academic scores; and doctor; $F(2,57) = 3.83$, $p < .05$ for Recreational scores]. For the teacher, participants reported more willingness on SAQ-Academic tasks in the fourth grade than in the third grade. Third graders reported more willingness to participate in SAQ-Total, Academic, Social, and Recreational tasks when the mother presented information when compared to fourth graders; in addition, fourth graders responded more positively than fifth graders. When the father provided the information, there was a significant difference between behavioral attitudes of fourth and fifth graders in SAQ-Academic tasks. Fourth graders were significantly more willing to participate in academic tasks when compared to fifth graders. Finally, fourth graders when compared to fifth graders were significantly more willing to participate in SAQ-Recreational activities when the outside doctor provided information.

Table 3.1

Description of Participants

	Information Source						
	Vid	Tch	Mom	Dad	Doc	$?^2$	*p*
Number of participants	66	58	57	55	60		
Gender							
Male	34	29	29	31	32		
Female	32	29	28	24	28	0.58	.97
Grade							
3	19	16	21	13	16		
4	21	17	21	26	16		
5	26	25	15	16	28	11.17	.19
Average Age (in years) [a]	10.36	10.35	10.12	10.21	10.04		

Note. N = 296. Vid = Videotape; Tch = Child's teacher; Mom = Actor portraying mother of child with autism; Dad = Actor portraying father of child with autism; Doc = Female actor portraying a "doctor." [a] = Groups did not significantly differ on age, F (4, 292) = 1.65, *ns*. Age was missing for three participants.

Table 3.2

Cognitive Attitudes by Source, Grade, and Gender (ACL scores)

	Information Source				
	Video	Teacher	Mother	Father	Doctor
			Sex		
Boys	21.62[1] (6.45)	23.31 (7.25)	22.86 (6.47)	22.71 (6.83)	22.13 (7.86)
Girls	26.56[1] (5.09)	26.14 (7.20)	23.14 (6.65)	23.04 (7.37)	23.96 (7.52)
			Grade		
Third Grade	23.95 (6.77)	19.94[1] (9.66)	24.14 (6.14)	20.85 (8.80)	24.44 (5.70)
Fourth Grade	25.00 (7.97)	25.65 (5.16)	24.05 (6.18)	25.77[1] (5.13)	19.19 (9.49)
Fifth Grade	23.27 (4.24)	$27.16_{a,b}$[1] (5.34)	19.93_{a} (6.85)	19.75_{b}[1] (6.51)	24.32 (7.05)

Note. Mean scores are presented with standard deviations in parentheses. For grade, means in the same *row* with like lettered subscripts differed significantly at $p < .05$; means in the same *column* with like numbered superscripts differed significantly at $p < .05$. For gender, means in the same *column* with like numbered subscripts differed significantly at $p < .05$. When homogeneity of variance assumptions were violated for univariate *F* tests, Welch *F* was used with Dunnett's T3 post-hoc test.

Table 3.3

Behavioral Attitudes by Source and Grade (SAQ-SF scores)

	Information Source				
	Video	Teacher	Mother	Father	Doctor
			Total		
Third Grade	26.16 (7.76)	26.19 (8.31)	30.43[1] (4.88)	27.54 (4.72)	26.75 (7.43)
Fourth Grade	27.81 (6.49)	30.00$_{a}$ (5.35)	27.90[2] (7.23)	28.46 (4.71)	23.19$_{a}$ (7.14)
Fifth Grade	26.92$_{a}$ (4.14)	29.96$_{b,d}$ (4.13)	20.67$_{a,b,c}$[1,2] (4.84)	24.25$_{d}$ (7.09)	27.39$_{c}$ (5.21)
			Academic		
Third Grade	8.94 (2.68)	8.31[1] (2.87)	10.43[1] (1.54)	9.69 (1.84)	9.06 (2.89)
Fourth Grade	9.76 (2.02)	10.53[1] (1.56)	9.52[2] (2.44)	10.31[1] (1.59)	8.13 (2.99)
Fifth Grade	9.35$_{a}$ (1.60)	10.32$_{b,c}$ (1.57)	7.47$_{a,b}$[1,2] (2.13)	8.25$_{c}$[1] (2.65)	9.18 (2.09)
			Social		
Third Grade	8.63 (2.83)	9.19 (2.74)	10.19[1] (1.66)	9.15 (1.63)	8.75 (2.46)
Fourth Grade	9.24 (2.45)	9.82 (2.19)	9.19[2] (2.69)	9.31 (1.85)	7.87 (2.58)
Fifth Grade	8.81 (1.65)	10.00$_{a}$ (1.68)	7.07$_{a,b}$[1,2] (1.71)	8.31 (2.47)	9.14$_{b}$ (1.94)

Table 3.3 (continued)

	Information Source				
	Video	Teacher	Mother	Father	Doctor
			Recreational		
Third Grade	8.58 (2.52)	8.69 (2.94)	9.81^{1} (2.25)	8.69 (1.97)	8.94 (2.40)
Fourth Grade	8.81 (2.52)	9.65_{a} (2.34)	9.19^{2} (2.73)	8.85 (2.13)	$7.18_{a}{}^{1}$ (2.26)
Fifth Grade	8.77_{a} (1.92)	$9.64_{b,d}$ (2.02)	$6.13_{a,b,c}{}^{1,2}$ (1.68)	7.69_{d} (2.52)	$9.07_{c}{}^{1}$ (2.21)

Note. Mean scores are presented with standard deviations in parentheses. For each dependent variable, means in the same *row* with like lettered subscripts differed significantly at $p < .05$ with Bonferroni correction for multiple contrasts; means in the same *column* with like numbered superscripts differed significantly at $p < .05$ with Bonferroni correction for multiple contrasts. When homogeneity of variance assumptions were violated for univariate *F* tests, Welch *F* was used with Dunnett's T3 post-hoc test.

CHAPTER 4: DISCUSSION

Summary of Findings

The primary purpose of this study was to evaluate the potential effects of different sources on initial attitudes of typically developing peers toward a child with autism. Our findings suggest interactive effects between source of information and target child characteristics.

Interaction Effects between Grade and Source. As predicted, a number of interactions were found between information source and grade. Fifth grade students were more likely to report more positive behavioral intentions when their teacher presented information about the new student, than when the mother or father presented information about the new student. An outside doctor who presented information about a new child to the class was also found to result in more positive behavioral intentions when the students reached the fifth grade, in comparison to the mother as the source of information. This result is striking since the same actor played the mother and the outside doctor in all instances of data collection. The only variations in the mother's and the outside doctor's presentations were the actor's attire and the initial introduction of "Hi, I'm Robby's mother, Mrs. Smith" versus, "Hi, I'm Doctor Smith. I work with kids like Robby." Based on persuasion theory, it could be argued that the fifth grade participants attribute more credibility to the outside doctor than to the mother.

When reported cognitive attitudes were compared to conative attitudes (i.e., behavioral attitudes), some differences were observed as well. With the mother as the information source, fifth graders were less likely to participate in activities with the child with autism. Further, the

most variability between reported cognitive and conative attitudes was in the fifth grade participants. For three of the conditions of cognitive attitudes, the scores were significantly different. These variances may be due to a growing differentiation between roles that adults play in students' lives as they mature. As children get older, influence is less likely to come from their parents and more likely to come from teachers or other outside doctors. This outcome was true for both behavioral and cognitive attitudes.

Study Limitations and Suggestions for Future Research

The findings of this study must be considered in the context of its limitations. First, the child with autism was presented to the participants through a videotape. Videotaped information may not be consistent with how new students will be introduced in actual classrooms. Most likely, new students with autism will be meeting their typically developing peers in person. It was beyond the scope of this study to personally introduce new students to their peers since that would have required a student to miss class for each instance of data collection.

The second limitation of our study was regarding the characteristics of our sample. Even though our sample was representative of the counties in which the sample was drawn, it may not be representative of other populations to which the study could be applied. Specifically, eighty-three percent of our participants reported their race as Caucasian; in addition, the students live in counties that are primarily characterized by low socio-economic status.

Due to these limitations, the findings of this study should be applied to diverse populations with restraint. In addition, participants were only selected from the third through fifth grades. It would be beneficial to extend this line of research to older students, as students younger than third grade may have difficulty answering these questions. Therefore, a similar study should take place, but with modified and age- appropriate measures.

Further study should also extend our research questions to look at students' behavioral and cognitive attitudes toward an unfamiliar female with autism. Different behavioral and cognitive intentions of students may be observed since they might see themselves as less similar or more similar to a new female classmate with autism. A final suggestion for further research would be to consider if another source had a different impact on the participants' intentions. Specifically, as children mature, their peers become more influential in their perceptions and attitudes. Therefore, consideration of a peer from their class or a same-age peer of Robby's would be interesting to consider. The actual child with autism also should be considered as a source of information. In "Making Friends with Aliens: Inclusion and Collaborative Autobiography" (Lissen & Westbay, 2001), the child with autism writes a three- to four-page introduction of himself to his new classmates. This written introduction could be distributed to each of the students in the new classroom. The child with autism being the source of information about himself or herself would remove source as a factor in explaining the variance in the reported attitudes of the general education students. Therefore, the reported attitudes by his or her new classmates would be based on their reactions purely to the child with autism and any variance could then be isolated more precisely and attributed to other factors being tested such as grade, age, gender and the like.

Implications for Practitioners and Concluding Remarks

Based on the data from this study, the effects of information source in introducing a new student with autism into a general education classroom were found to be variable across behavioral and cognitive attitudes. The differences were most apparent for fifth graders. Mother and father sources were generally observed to decline in effectiveness as age increased, and the

teacher as the source of information was found to have more influence as age increased. By considering behavioral attitudes in different contexts (i.e., academic, social, recreational, and total), we found that different sources are effective around different contexts. This exemplifies the need to select an appropriate source when introducing a child with autism into a new classroom based on the characteristics of the target child.

These findings need to be replicated and expanded in order to be applied to a more diverse population. In addition, although we found that providing information from particular sources about the disability of a child with autism to his general education classmates is effective in attitude change, there are undoubtedly additional factors that could be considered in future studies. For example, classroom-based interventions may be beneficial, such as providing peer tutors to the child with autism or providing to the general education students programs such as the Kids on the Block (Aiello, 1988). Through the Kids on the Block program, a group of disabled puppets perform with the goal of teaching children acceptance of a variety of disabilities and appreciation of individual differences (Aiello, 1988). Further research could compare and contrast a program such as the Kids on the Block with explanatory information about a specific child.

Inclusive education is an important educational avenue for students with autism. In order for inclusion to be successful, the introduction process of the new student is vital. Our research expands the current body of knowledge in the area of inclusion to consider who is the most effective at introducing a new student with autism to a general education classroom. Students with autism must deal with social and communication disabilities in addition to others' responses to their unusual behaviors, many of which may not be understood by their typically developing classmates. The presentation of information regarding a new student with autism is important,

and the most effective way to deliver this message must be considered in order to make inclusion successful and beneficial for both the child with autism and his or her nondisabled peers.

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Appendix

Descriptive and Explanatory Information

Videotape: "This is Robby. He is about the same age as you, and he goes to school like you do. Robby's family lives in a town called Woodmont. Woodmont is a medium sized town that has schools, churches, shopping malls, movie theaters, libraries, and most of the other things towns have. Robby and his family go to the zoo, the shopping mall, and church. During the summer, they sometimes go to a park or a lake to enjoy being outdoors. Robby also likes to eat at McDonald's."

[Voice-over ends. Adult female walks into view, toward Robby, and says, "Hi Robby, what are you doing working on a puzzle?" Robby replies, "Hi Robby working on puzzle" while showing gaze aversion and stereotypic hand movements and rocking. Adult female replies, "Do you want to go play with one of your friends when you're done with the puzzle?" Robby replies, "Friend done with puzzle." Adult female states, "Well, it looks like you're doing a real good job, Robby." Robby replies "Good job, Robby." Adult female walks out of view and the voice-over returns.]

"Robby likes to do many of the things you do. He likes to watch television, play with puzzles and put model cars together. Robby lives in Woodmont now, but his family might be moving to your neighborhood soon. If they do, he'll be starting at your school and may be in your class."

Source introduction: Robby's mother/father: "I'm Mr./Mrs. Smith and that was my son, Robby." Doctor: "I'm Dr. Smith, and I work with kids like Robby." Teacher: No introduction.

"Robby has autism, which means that there's something wrong with his brain that makes it hard for him to look at other people and talk to them. When he talks, he sometimes repeats what was said to him instead of answering the question. And sometimes it seems like he can't hear, even though he can. Sometimes Robby waves his hands around, or spins around or rocks back and forth, or bounces up and down in his chair. He may even hit or bite himself or other people and things. And Robby has a hard time changing activities, going from one thing to doing something else. Robby doesn't mean to be different or hard to get along with. He's not trying to make trouble; he does these things because he has autism. But people with autism can learn to do many of the things that people without autism can do, like talk to and play with other people, go to school, read, and write, and even get jobs or go to college when they grow up. They just need some help to learn how to do these things."