2016

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Published in *Topics in Early Childhood Special Education* (2016), pp. 1-12; doi: 10.1177/0271121415626711

Teacher Perceptions of Two Multi-Component Interventions: Disability Awareness and Science

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Abstract

This study investigated teachers' perspectives about two interventions designed to promote kindergarteners' attitudes toward peers with disabilities. Interviews with teachers were conducted following the 6-week interventions. Teachers shared views on the best and most difficult aspects of the interventions, perceived benefits for teachers and children, and suggestions for improving the interventions. Teachers' responses were analyzed using content analysis. One salient teacher reported benefit was notable improvement in social skills made by all students. Moreover, students in the experimental condition displayed increased acceptance of peers with disabilities, whereas teachers reported becoming more confident discussing the topic of disability with students. Teachers also reported that although it was difficult to step back and observe children in cooperative learning groups, it was beneficial to see that when children were given opportunities to handle social situations on their own, many were capable of doing so. Implications for practice and recommendations for future research are discussed.

Keywords: peer interactions, inclusion, disability populations, intervention strategies, evidence-based practices, acceptance

Research has shown that the benefits of inclusion are numerous and can positively affect children with a range of disabilities (Barton & Smith, 2014; Division for Early Childhood [DEC]/National Association for the Education of Young Children [NAEYC], 2009). Inclusive placements help children develop social competencies, including building friendships and experiencing a sense of belonging (Barton & Smith, 2014, Buysse & Hollingsworth, 2009; Strain, 2014). Inclusion benefits more than the subset of children with disabilities. For example, families of children without disabilities hold generally positive views of inclusion (Odom, Buysse, & Soukakou, 2011). Also, as a result of inclusive experiences, typically developing children gain positive educational and attitudinal outcomes, such as tolerance and acceptance of individual differences in their peers (Buysse & Hollingsworth, 2009; Strain, 2014).

Although research has consistently demonstrated the benefits of inclusion, universal access to inclusive programs for children with disabilities is far from a reality (Barton & Smith, 2014). Early childhood education, with support on the national front, is taking strides to ensure that children with disabilities are included in classrooms with their typically developing peers. The U.S. Department of Health and Human Services (HHS), in conjunction with the U.S. Department of Education (DoE), recently published a *Policy Statement on the Inclusion of Children With Disabilities in Early Childhood Programs* (2015) outlining the scientific base for the benefits of inclusion as well as the legal foundation for inclusion. Acknowledging that there are challenges, HHS and the DoE promote building a culture of inclusion and offer a list of recommendations to states (e.g., implementing statewide supports for children's social-emotional and behavioral health). This document also includes recommendations to local communities (e.g., assessing and improving the quality of inclusion in early childhood programs).

The HHS/DoE 2015 report builds on the foundation established by the DEC of the Council for Exceptional Children and the NAEYC in their 2009 *Joint Position Statement on Inclusion*. In that statement, leaders from these two groups identified the defining features of inclusion as access, participation, and supports. As the DEC/ NAEYC position statement makes clear, simply placing children with disabilities in classrooms with their typically developing peers (i.e., providing access) is not enough to be deemed high-quality inclusive settings; programs must ensure participation and be built on a strong foundation of high-quality supports.

Promoting Social Acceptance and Friendship

As the field of early care and education provides increasing numbers of children access to inclusive environments, it is critically important that children with disabilities experience social acceptance. Children with disabilities are at high risk of not being accepted by their peers, as many young children with special needs have difficulty with peer interactions (Brown, Odom, McConnell, & Rathel, 2008). Children with disabilities tend to spend more time engaged in solitary activity and observation, and tend to be less socially involved even in inclusive classrooms (Odom et al., 2006). If children with special needs are not supported in acquiring social skills and developing friendships when they are young, they are at risk for social isolation, rejection, further social-emotional delays, and academic failure.

Class-wide interventions can promote inclusion, understanding, and social acceptance of peers with disabilities, and may also facilitate interactions among peers with and without disabilities (Brown, Odom, & Conroy, 2001; Brown et al., 2008). Class-wide interventions may help build a culture of inclusion by targeting attitudinal barriers and beliefs, which are "the most frequently reported barrier to early childhood inclusion" (HHS/DoE, 2015, p. 6).

Attitudes include affective (i.e., feelings), cognitive (i.e., thoughts), and behavioral (i.e., actions) components about a referent such as a person with a disability or a person of a different race or ethnicity (Triandis, Adamopoulos, & Brinberg, 1984). Three variables shape a person's attitude about a referent: indirect contact with the referent (through books, movies, TV), direct contact with the referent (personal experiences and social interactions), and the primary social group's attitudes about the referent (what one's family thinks and says about the referent, as well as how they behave toward the referent; Triandis et al., 1984). Limited intervention research has targeted the attitudes of young children toward peers with disabilities.

The purpose of this article is to showcase teachers' views about their participation in a study that focused on the acceptance of individuals with disabilities. Research questions addressed were as follows:

Research Question 1: What were the most positive aspects of participating in the intervention study?
Research Question 2: What were the most difficult aspects of the intervention study?
Research Question 3: What benefits did children gain from participating in the study?
Research Question 4: What benefits did teachers gain from participating in the study?
Research Question 5: What suggestions did teachers have for researchers working with other professionals to implement the intervention study?

We provide an overview of the larger Institute of Education Sciences (IES) study, describe the methods used to gather teachers' perspectives about the intervention, and discuss the categories that emerged from teacher interviews. We highlight teachers' reflections of intervention benefits for children, and conclude with a discussion of limitations and implications for future practice.

Method

Overview of the Larger Study

The larger IES study was a randomized control study that examined the efficacy of a 6-week classroom-wide intervention titled the *Special Friends* program (Favazza & Odom, 1997; Ostrosky & Favazza, 2008–2012). Based on the theoretical work described by Triandis et al. (1984), the program was designed to positively affect children's attitudes toward individuals with disabilities by targeting the three variables that shape a person's attitudes toward a referent— indirect experiences, direct experiences, and the child's primary social group. The IES study targeted children's attitudes through storybook reading about children with disabilities (indirect contact), cooperative learning group experiences with classmates who had disabilities (direct contact), and opportunities to take home books about children with disabilities to read and discuss with family members (primary social group).

Thirty-two classrooms in a Midwest state and a Northeast state participated in the study. Kindergarten teachers were randomly assigned to one of two curricular programs. Teachers in 16 experimental classrooms implemented the *Special Friends* program with a focus on disability awareness (Favazza & Odom, 1997), while teachers in 16 contact control classrooms implemented a *Science* program with a focus on living and non-living things (adapted from the *ScienceStart!*™ curriculum by French and Conezio, 2007, which is currently called *LiteraSci*). Teachers were aware of the fact that the two programs

were being compared. Both curricula were implemented 3 times per week for 6 weeks (18 sessions in total).

Although the two programs differed in content, they shared a similar three-part format: (a) class-wide book readings and discussions; (b) mixed-ability, cooperative learning groups; and (c) home-book reading and discussions with family members. During cooperative learning groups, children had opportunities to play with their peers with disabilities. Cooperative learning groups had between four and six children, at least one of whom had a disability, and they remained consistent for each of the 18 sessions. One major difference between the cooperative learning groups in the *Special Friends* and *Science* programs was in the type of activities available to the kindergarteners. The cooperative learning groups in the *Special Friends* classrooms included unstructured, play-based activities such as pretend play, while the cooperative learning groups in the *Science* classrooms included structured activities with goals to achieve including measuring the length of worms using different measurement tools such as rulers and pieces of yarn.

The results from the larger IES study showed that typically developing students in the *Science* program significantly lowered their mean level of acceptance of children with disabilities from pre- to post-testing, while those in *Special Friends* experienced a non-significant increase. Data gathered across 2 years on more than 400 typically developing kindergarteners revealed that marginal means were greater from pre-testing to 2 years post intervention for children in the *Special Friends* program compared with children in the *Science* program. It appeared that the *Special Friends* program, with its focus on acceptance of disabilities, played a role in preventing children's attitudes from worsening over time.

Participants

The current study focused on the 32 teachers who participated in the larger study. Following the 6-week intervention, all teachers were interviewed about their perspectives on the programs. However, the interview transcripts from four teachers were accidentally deleted electronically. Therefore, data and results represent 28 classrooms (12 in the Northeast, 16 in the Midwest) from 13 *Special Friends* classrooms and 15 *Science* classrooms. Teacher demographics are presented in Table 1 (demographics were not gathered on co-teachers). In co-taught classrooms (n = 4), teachers were interviewed together, but for the purpose of data analysis, responses were coded for each individual teacher, for a total of 32 participants.

Table 1. Characteristics of Teachers.

Demographics	*Special Friends*	*Science*
Education level		
BA or BS 3 4		
BA or BS plus additional coursework	5	7
MA	1	3
MA plus additional coursework	4	1
Special education training		
None	1	0
Seminar or workshop	1	1
1–2 courses	6	7
3–4 courses	0	2
More than 4 courses	1	4
Special education graduates	4	1
Age		
Below 25 years old	2	1
26–35 years old	3	6
36–45 years old	2	3
46–55 years old	5	5
Above 55 years old	1	0
Number of years teaching		
M (range)	12.8 (0–26)	13.3 (3–33)
Number of years teaching kindergarten		
M (range)	6.9 (0–22)	7.1 (2–16)

Teacher Interviews

Teachers were asked to participate in an interview about their experiences with the *Special Friends* or *Science* program after all intervention activities were completed. The interviews were conducted by one of the two principal investigators for the larger IES study or by the project coordinator, who also had a PhD and many years of experience in special education. Interviews took place in the teachers' school buildings and lasted between 30 and 60 min. Teachers were given the interview questions in advance of the interviews. With teacher permission, all interviews were audio recorded.

The interview questions were developed by members of the research team to address the research questions. The teachers were asked about the most positive aspects and the most difficult aspects of participating in the intervention study. They also were asked about benefits and changes that they and their students gained from participating in the study. Finally, they were asked to provide suggestions for future implementations of the intervention study.

The research team first asked two separate questions to understand the benefits that the students and the teachers gained and the changes that were attributable to their participation in the study. After analyzing teachers' responses to these two questions, however, the researchers realized that teachers addressed these two questions in very similar ways, with benefits and perceived changes being discussed simultaneously. Therefore, responses about benefits and the questions about changes were combined, with responses focusing on student benefits being one category and responses focusing on teacher benefits being another category.

Data Analysis

Teacher data were analyzed by a three-person team comprised of one researcher with a PhD in Early Childhood Special Education and two doctoral students in Early Childhood Special Education, all of whom had several years experience working with children with disabilities in inclusive classrooms. The data analysis process demonstrated the use of collaborative work, a trustworthiness criteria for qualitative studies (Brantlinger, Jimenez, Klinger, Pugach, & Richardson, 2005). The team used the six-step method of content analysis described by L. J. Johnson and LaMontagne (1993). First, data were prepared for analysis. Audio recordings of interviews were transcribed verbatim by a research team member. If it was difficult to understand a portion of the interview, a second team member listened to the recording and provided input. Interview recordings yielded 114 single-space pages of text. A research team member along with a graduate assistant listened to 25% of the interviews for accuracy. Second, members of the three person data analysis team individually read four interview transcripts, and met to discuss ideas for potential categories.

Third, the team identified units of analysis. For example, if a teacher's response was, "children appeared more accepting of others and they really enjoyed the books," the unit of analysis would reflect two distinctly different responses: acceptance of others, enjoyment of books. Working independently, the team members re-read four interview transcripts and bracketed answers to the interview questions. Non-answers (responses that did not address the question) also were bracketed. Occasionally, responses did not address the stated question, but did address another question; in those cases, responses were moved to the more appropriate question.

Fourth, the team generated tentative categories. They independently re-read the transcripts and combined similar responses into tentative categories. For example, "they had fun with the books" and "they enjoyed the books" were placed in the same category. From the tentative categories, category definitions were created using key words and quotes from the data. Team members then met to discuss and reach consensus on these initial categories to ensure that each category was mutually exclusive and each unit of analysis would fit into only one category.

Fifth, the team refined categories. Seven transcripts were selected for coding using the initial set of defined categories. Team members individually coded the data and met regularly (at least bi-weekly) to reach consensus on all codes. Team members refined the coding scheme by combining categories, omitting categories, and creating new categories when appropriate. This process included the development of *priority coding*; that is, establishing guidelines for coding items that had the potential to be included under more than one code. For example, teachers were asked to describe the best aspects of the *Special Friends* or *Science* program, one coding category was *children interacting with peers* whereas another was *cooperative learning groups*. Based on the guideline that *children interacting with peers* took precedence over *cooperative learning groups*, a comment that encompassed both ideas (e.g., "I would say the best part was watching my children get so excited working with their collaborative groups and interacting with students that they would normally never get to see and interact with and learn how to deal with situations by themselves versus always running to me for all their guidance and help") was coded as *children interacting with peers*. Team members also identified responses that did not reflect any of the existing categories and put those in a category called "*other*."

Finally, the team established category integrity using the following steps. After the initial sample of data was coded, a graduate student in Special Education who was not part of the data analysis team conducted a reliability check using 10% of comments randomly selected from each category across the seven interview questions. The student matched responses with categories, and a point-by-point method of agreement (Kazdin, 2011) was used to calculate reliability. Following this reliability check, categories were refined. As the team continued to code data, periodic reliability checks were conducted to assess category integrity. When interrater agreement reached 80% on all categories, 20% of the comments from each category were randomly selected for coding by a different graduate student. Reliability ranged from 80% to 97% and averaged 86% across all categories and questions.

Results

The first research question focused on teachers' perceptions of the most positive aspect of the interventions. The highest frequency of responses about both interventions focused on the three main components of the interventions (e.g., books, cooperative learning groups, and home-book reading). Specifically, teachers in the *Special Friends* intervention mentioned the books as the most positive aspect of the program, whereas teachers in the *Science* intervention thought the cooperative learning groups were the most positive aspect.

Teachers in both interventions also spoke about children interacting with their peers, made general positive comments, discussed benefits realized by their students with disabilities, and mentioned stepping back and allowing children more freedom to handle social situations on their own. Finally, teachers in the *Special Friends* intervention also spoke about increased acceptance of, and children's interactions with, peers with disabilities. A breakdown of comments by category and group is presented in Table 2.

Table 2. Teachers' Perceptions of the Most Positive Aspects of the Study.

Category and abbreviated definition	*Special Friends*	*Science*	Total	Sample quote
Intervention components[a]: Selection and use of books, cooperative learning group activities and materials; aspects related to sending books home each week	10 (10)	37 (23)	47 (33)	"Another thing I like about the project was sending the books home and I had a lot of parents comment about the books and it showed that a lot was going on."
A. Books	6 (6)	15 (7)	21 (13)	"I know the kids really liked the books. Especially the ones with sign language."
B. Cooperative learning groups	3 (3)	14 (9)	17 (12)	"I think the best part was the activities that you brought into the room. They were just already put together for the children to experience and have a lot of hands on experience."
C. Home-book component	1 (1)	8 (7)	9 (8)	"The families really loved the stories going home every week. We got a lot of positive feedback from the families at teacher conferences."
Children interacting with peers: Students sharing, collaborating, communicating, helping one another, and using conflict resolution skills	6 (6)	22 (13)	28 (19)	"Students are talking with their peers more often."
Positive comments: Reasons teachers or students liked the interventions	2 (2)	8 (4)	10 (6)	"I had a wonderful science program that I didn't have to set up."
Benefits for children with disabilities: Children with disabilities having new experiences, becoming more comfortable, making friends, and interacting more with peers	1 (1)	5 (3)	6 (4)	"The children with special needs seem a lot mor comfortable on their part of the group . . . it looks to me like they feel like a part of the group now . . . "
Increased acceptance of and interactions with peers with disabilities: Children without disabilities accepting, talking to, interacting with, and playing with children with disabilities	5 (4)	0 (0)	5 (4)	"All the kids now seem to be much more accepting of kids with disabilities."
Teacher stepping back and observing children: Teachers observing what children were doing during program implementation	2 (2)	1 (1)	3 (3)	"The best part was that I had the opportunity to step back and watch my kids interact . . . "

For all tables in "Results" section, number in parentheses following number of comments indicates the number of teachers who made the comments. Because four of the classrooms had co-teachers, there are more teachers represented in the results than there are classrooms.

a. See below for breakdown by component.

The second research question focused on the most difficult aspect of implementing the intervention. The highest frequency of responses from teachers across both interventions focused on how difficult it was to step back and not intervene during the cooperative learning groups. Teachers were encouraged not to interfere in student interactions so that students had the opportunity to negotiate sharing and problem solving on their own. Thus, although this was mentioned as a strength by some teachers, it also was cited as a struggle by others. Teachers who participated in the *Special Friends* intervention noted that observing as opposed to providing instruction during cooperative learning groups was one of the hardest aspects of the program. At the same time, they discussed the important benefits of not intervening such as the knowledge they gained about their students (i.e., level of social skills, specific social challenges that needed to be addressed) as a result of being able to observe their kindergarteners.

The next highest frequency of responses in terms of difficulty focused on specific components of the interventions (books, cooperative learning groups, home-book component). Teachers in both interventions also spoke about teacher roles and responsibilities, and discussed difficulties that children (individually and as a group) had adjusting to new situations. Teachers in the *Special Friends* group also mentioned program logistics such as challenges with timing, scheduling, or allowing time for research staff to set up and clean up materials. Some comments did not fit into a larger category or did not address the question, and were categorized as "*other*." A breakdown of comments by category and group is presented in Table 3.

The third research question addressed the benefits that students gained from participating in the interventions. The most frequent benefits noted across both interventions focused on improved social skills, and increased acceptance and understanding of peers with disabilities.

Table 3. Teachers' Perceptions About the Most Difficult Aspects of the Study.

Category and abbreviated definition	*Special Friends*	*Science*	Total	Sample quote
Teacher stepping back and not intervening during cooperative learning group work: Difficulties associated with not intervening, not helping children solve problems, and not addressing inappropriate behaviors	4 (4)	11 (10)	15 (14)	" . . . I really wanted to step in and get them to interact better . . . "
Intervention components[a]: Problems with the selection and use of books; problems with cooperative learning groups (length of activities, amount of materials); problems with weekly dissemination of books (exchanging, record- keeping)	6 (6)	6 (6)	12 (12)	" . . . There could have been a little more structure for the activities. So the kids would have felt more like they knew what they were doing . . . "
A. Books and book reading	5 (5)	1 (1)	6 (6)	
B. Cooperative learning groups	0 (0)	4 (4)	4 (4)	
C. Home-book component	1 (1)	1 (1)	2 (2)	
Other/general comments: General comments about the program; ambiguous comments	9 (4)	1 (1)	10 (5)	"I really didn't find the implementation of the project difficult."
Teacher roles and responsibilities: Teachers' uncertainty about aspects of the program (how much to intervene, dealing with inappropriate behaviors)	3 (3)	5 (4)	8 (7)	"The paperwork was time-consuming."
Children adjusting to new situations: Children with and without disabilities adjusting to rules of the program, learning how to solve problems, and sharing materials	1 (1)	3 (3)	4 (4)	" . . . It was difficult because they were . . . reaching for what they knew at that time or didn't know at the time in terms of problem solving situations . . . "
Logistics of program: Challenges with program logistics (scheduling the intervention, research staff setting up materials)	3 (4)	0 (0)	3 (4)	"It's hard when you guys come in and I'm in the story and you start setting stuff up and I lose them . . . "

a. See below for breakdown by component.

Although the number of comments in both of these categories was large, *Science* teachers strongly emphasized the former category (social skills) whereas *Special Friends* teachers emphasized the latter (increased acceptance). Regarding social skills, both *Special Friends* teachers and *Science* teachers reported that they witnessed improvements in turn-taking, sharing, helping, and being cooperative, and an increase in friendships with children with disabilities as well as children without disabilities (see Table 4). Teachers thought that children's gains in social skills exceeded the skills typically expected of children at this time in the school year. One *Science* teacher said,

> Usually, kids have a friend or two they stick with and that's it, especially at the beginning of the school year. Because of *Science* we placed them in groups for the cooperative learning. When we were not [implementing the *Science* intervention] and had to assign them to small groups or partners to work with, they worked and played together very well, probably better than any other class I have worked with.

Teachers in both interventions also spoke about benefits in children with disabilities. Teachers reported that over the course of the 6-week intervention, they noticed changes in the participation of children with disabilities in class activities and attributed these changes, in part, to their participation in the intervention. As one teacher from the *Science* intervention reported, " . . . well, I want her [student with disabilities] to feel more like part of the group and it [participation in intervention] made her feel like part of the group." In addition, teachers reported that children with disabilities showed improvements in social and academic skills.

Remaining teacher comments were categorized as other benefits, expressing and understanding the needs of self and others, children generalizing knowledge learned at school to home, class as a community, and becoming aware of similarities and differences. Some comments did not fit into a larger category, did not address the question, or reflected negative changes, and were categorized as "*other*" (e.g., "The group I put together that was not a good group . . . "). A breakdown of comments by category and group is presented in Table 4.

The fourth research question focused on teacher benefits attributed to their participation in the interventions. The two largest categories of responses focused on changes in instruction and reflections on practice, and intervening less, observing, and understanding students. Regarding the idea of intervening less, initially, teachers observed students because they were instructed not to intervene during the cooperative learning groups

Table 4. Child Benefits Attributed to Participation in the Intervention Study.

Category and abbreviated definition	*Special Friends*	*Science*	Total	Sample quote
Improved social skills: Children's improved social skills (turn-taking, sharing, being cooperative, being friends)	10 (8)	30 (14)	40 (22)	" . . . They are a lot better about helping each other and knowing they need to share."
Increased acceptance and understanding of peers with disabilities: Children becoming more accepting of peers with disabilities (inviting them to play, helping them) and gaining knowledge about disabilities (names of disabilities, types of adaptive equipment)	30 (13)	4 (3)	34 (16)	"They talk about the different aides . . . to help people with special needs and disabilities."
Benefits and changes in children with disabilities: Changes in students with disabilities attributed to participation in the program (social skills, academic skills, increased participation in class activities)	12 (7)	12 (7)	24 (14)	"I watched her become more verbal."
Other benefits: Child benefits that do not fall under other categories (academic knowledge, emotional improvements)	8 (5)	15 (8)	23 (13)	"I think they learned about different things and topics like insects and worms."
Expressing and understanding needs of self and others: Students expressing own needs more effectively and understanding others' needs (demonstrating empathy and concern)	1 (1)	10 (4)	11 (5)	"If I skip someone during snack, they say, 'Oh, she needs snack. . . '"
Students generalizing knowledge from school to home: Children transferring skills and knowledge from the program to their home, school, and community	1 (1)	8 (7)	9 (8)	"Being helpful not just in the classroom, but at home."
Other: Child changes or behaviors that do not fall under any of the other categories (general, unclear, or "outlier" comments); comments about negative changes	1 (1)	7 (4)	8 (5)	"The students appreciate things more and communicate what they have learned."
Class as a community: Class becoming a closer unit and children becoming more comfortable with each other	3 (3)	4 (4)	7 (7)	"They were more comfortable with each other as well."
Becoming aware of similarities and differences: Children becoming more aware of/acknowledging student differences (in ability, appearance, services received)	3 (2)	3 (2)	6 (4)	"I think they are more aware of students with differences . . ."

unless absolutely necessary. However, these observations resulted in a variety of insights about students. Teachers commented on how they witnessed children problem solving: "Stepping back and watching them problem solve on their own and realizing that they actually can do it." Teachers also noted that they became more familiar with children's interpersonal skills: "Really you get to know their personalities, like who is more dominant." Teachers also recognized the benefits of giving children more responsibility: "It was nice for me to see who can handle a little more freedom and who can't," while another shared, "There is some leadership that I didn't know existed."

Although the number of comments in both of these categories was large, *Science* teachers provided the majority of comments. Not surprising, the third largest category of responses, related to gaining knowledge about disabilities and becoming more comfortable talking about disabilities, was shared more often by *Special Friends* teachers. For example, one teacher said,

> I think it [the *Special Friends* program] made me a better teacher, too. Before this project, had they [the students] talked about disabilities, I probably would have brushed it off. But now we talk about it more and I'm very honest and they're very honest with their questions and I try to answer them the best that I can.

Teachers in both interventions also spoke about instructional resources they received through the interventions, such as books, discussion guides, curriculum, lesson plans, activities, materials, and the program as a whole. Some comments that were about general benefits or did not address the question were categorized as "other" (see Table 5). For example, one teacher said, "It was an all-around benefit for everyone . . . " and another teacher said, "That one thing that sparked my interest most was . . . it's called your friendship nomination."

The final research question focused on teachers' suggestions. The largest category of responses highlighted positive aspects of the program, and did not offer any ideas. Teachers also mentioned a need for change in activities; suggestions about logistics for teachers and parents; ideas for scheduling the intervention; suggestions about amount, content, timing, management, and dissemination of paperwork; and ideas for organizing and managing the home-book reading component. Some comments were general in nature or did not address the

question, and were categorized as "*other*" (see Table 6). For example, one *Science* teacher said, "I don't know if I would have to change anything." Another teacher in the *Special Friends* program said, "One mom commented . . . 'it would be nice if a program like this could continue through the grades.'"

Table 5. Teacher Benefits Attributed to Participation in the Intervention Study.

Category and abbreviated definition	*Special Friends*	*Science*	Total	Sample quote
Changes in instruction and reflections on practice: Ways the program enabled teachers to improve practice; reflections about practice and pedagogy; plans to use program materials in the future	12 (9)	25 (13)	37 (22)	"I would like to go back the second semester, and talk about the books and go back over it again."
Intervening less; observing and understanding students: Benefits of intervening (allowing conflict and giving children responsibility to work things out); ways that the interventions enabled teachers to understand students and their needs	5 (5)	30 (12)	35 (17)	" . . . when I spy conflict, I keep my eyes on it, but I try to hold back and see if they can solve it."
Gaining knowledge about disabilities; becoming more comfortable talking about disabilities: Teachers gaining knowledge about disabilities, feeling more comfortable talking about disabilities and adaptive equipment, and feeling more comfortable having students with disabilities in their class	19 (8)	3 (2)	22 (10)	". . . . I am more comfortable being able to talk to the kids about disabilities. . . "
Instructional resources: Teachers' appreciation of resources (books, discussion guides, curriculum, activities, other materials) they received through the program	3 (2)	10 (10)	13 (12)	"I love reading books, and you know that. And that's what I did at that time of day anyways. For me, it was a win win."
Other comments: Comments of a general nature about benefits or changes; unclear and outlier comments	5 (5)	7 (4)	12 (9)	"I learned a lot from the whole project and the overall experience"

Table 6. Suggestions for Researchers Working With Other Professionals to Implement the Intervention Study.

Category and abbreviated definition	*Special Friends*	*Science*	Total	Sample quote
Positive comments: Comments that are positive in nature, related to any aspect of the program	22 (14)	25 (12)	47 (26)	"I loved it! Just want you to come back and do it next semester!"
Need for change in activities: Suggestions for book reading and cooperative learning groups (changes in activities, matching books with activities, length of sessions, and distribution and cleanup of materials)	6 (6)	13 (7)	19 (13)	" . . . one day we planted seeds, but we had read about something completely different . . . "
Other comments: Comments that are uncear or outlier; comments regarding ideas for future research	13 (7)	3 (3)	16 (10)	"Get some information about the teachers' background on the questionnaire form."
Clarity of study logistics: Directions about program activities, information about content presented to students, expectations and roles for teacher involvement	6 (2)	8 (4)	14 (6)	"I think that you guys need to be more specific on how much a teacher can intervene. I think I got confused in the beginning [when] you told us not to intervene."
Scheduling intervention: Timing, frequency, and scheduling of setup or cleanup for cooperative learning groups; timeline of teacher tasks	2 (2)	5 (4)	7 (6)	"I think had I known ahead of time that some of things that were going to happen so quickly, I could have planned ahead maybe in my schedule . . . "
Amount, content, timing, management, and dissemination paperwork: Amount of paperwork required, timeline for completing paperwork, content of paperwork, and how paperwork was managed or disseminated	4 (4)	2 (2)	6 (6)	"I would wait a few weeks . . . 3 weeks . . . and then fill the forms. It would have been more beneficial."
Organizing and managing home-book reading component: Improvements needed in the weekly dissemination of books and in managing book returns	3 (3)	2 (2)	5 (5)	"Like on the book day, you might want to allot even more [time]."

In summary, the results indicate that teachers appreciated all components of both the *Special Friends* and *Science* interventions. Although teachers sometimes found it difficult to allow students to problem solve independently during cooperative learning groups, they also described how students gained social skills and increased their acceptance of peers with disabilities as a result of those experiences. Teachers in *Special Friends* classrooms had the unique experience of becoming more comfortable discussing disability in their classrooms.

Discussion

Acceptance

Promoting the acceptance of children with disabilities and other learning needs is an important mission for early childhood educators. Children with disabilities are at high risk of not being accepted by their peers and are prone to social isolation (Brown et al., 2008; Odom et al., 2006). By comparing the *Special Friends* intervention with the *Science* intervention in the larger IES study, it is clear that *Special Friends* was more effective in influencing students' acceptance of peers with disabilities. One potential explanation of this could be that the books and their associated discussion questions, along with the play materials (depicting individuals with disabilities) used during cooperative learning groups, all had a role in helping teachers and family members facilitate positive conversations about disability (Yu et al., 2015).

Because disability is not well represented in classroom books and materials (Favazza, Ostrosky, Meyer, Yu, & Mouzourou, under review), there is a danger that healthy conversations about disability are not occurring in classrooms on a regular basis. If early childhood educators do not make a concerted effort to have those conversations, classroom atmospheres, relevant to acceptance, will not likely change. If teachers have not had prior positive experiences discussing disability with their students, they may feel uncomfortable and ill-equipped to take on this task. Within the *Special Friends* intervention framework, the books, play materials, and homebook components helped teachers become familiar and competent with a variety of disability-related topics. Participating teachers were very pleased with the intervention components, especially the books, and thus may be inclined to use them in the future. As shown by comparing the outcomes of the *Special Friends* intervention with the *Science* intervention in the larger IES study (Ostrosky et al., 2014), if teachers do not intervene to address children's perceptions of individuals with disabilities, those perceptions will not change in a significant and lasting way, and in fact have the potential to become more negative.

Cooperative Learning Experiences

Although teachers who participated in the *Special Friends* intervention shared more comments related to social acceptance, teachers in the *Science* intervention shared more comments focusing on children's social skills such as improved turn-taking, sharing, helping, and being cooperative. These findings are consistent with research indicating that activities involving cooperative groups can enhance and support social network building, and improve social skills and the quality and quantity of social inclusion of children with disabilities (D. W. Johnson & Johnson, 1984, 1990; Munro, O'Brien, Payton, & Weissberg, 2006; Slavin & Cooper, 1999). One explanation for the difference in benefits noted by teachers could be that the focus on disabilities and acceptance (in the *Special Friends* class) may have predisposed teachers to focusing on indicators of attitude change. Another explanation for the differences could be the variance in level of structure between the types of cooperative learning groups in the two interventions. *Special Friends* activities were play-based and open-ended; they may have been motivating and enjoyable for children with advanced play skills, but difficult and potentially frustrating for children with limited play skills. Moreover, if a student with a disability had difficulty participating in the play scheme, interactions with typically developing peers may have been limited. In fact, children with disabilities tend to use more disruptive strategies when joining play, and they come up with less variable themes for pretend play compared with typically developing peers (Lieber, 1993).

In contrast, *Science* activities were less play-oriented and more goal-oriented (e.g., working as a group to make a bird's nest, measuring worms, sorting pictures of living and non-living items). Given that children with disabilities tend to engage more in structured play than in free play (Cress, Arens, & Zajicek, 2007), it is possible that the more obvious goal of the activity allowed students of varying abilities to work together more naturally, thus providing additional opportunities to practice fundamental social skills such as sharing, turn-taking, and helping one another. According to R. T. Johnson and Johnson (2009), students who participated in cooperative learning tended to engage in more interactions with individuals of different races or ability levels. Had the *Special Friends* activities been more goal-oriented, it is possible that teachers may have noticed increased social skills in children with and without disabilities.

Another possible contributing factor related to teachers in *Science* classrooms more frequently reporting improved social skills may be related to the materials used during CLGs. In *Special Friends*, the materials were novel toys such as doll houses, doctor's kits, and dress up clothes for community helpers, many of which depicted persons with disabilities (dolls seated in a wheelchair,

toy figures that used hearing aids). This sometimes resulted in children not wanting to share materials. In contrast, materials for the *Science* intervention were things that are commonly used in schools such as glue, shoe boxes, poster board, and markers; children in those classrooms may have had an easier time sharing materials perhaps because they regularly had access to those items so there was no "novelty" effect.

Intervening Less

Stepping back and intervening less during cooperative learning groups were mentioned by teachers as the most difficult aspect the study. This suggests that although the benefits of balancing child-guided and adult-directed learning have been widely promoted (National Research Council, 2000), many teachers feel uncomfortable letting children take the lead. Epstein (2007) advocated a balanced approach where teachers use both child-guided and adult-guided experiences. She suggested that teachers should choose from a range of teaching approaches, not from an extreme so that they facilitate each child's learning for a given context.

In fact, the teachers who participated in the current study also reported the benefits of child-guided learning. They learned that students were capable of solving problems, collaborating, and negotiating well without teacher help. Given the importance of a balanced approach to teaching, it would be beneficial for pre-service and in-service teachers to learn how to plan a variety of activities that have differing levels of child guidance.

Limitations

In considering the findings from this study, three limitations must be discussed. Each teacher only participated in one interview; therefore, the results should be interpreted with caution and cannot be generalized to other groups of teachers. Second, missing teacher data may have provided additional insights that might have otherwise informed our findings. Finally, the interviews were conducted by members of the research team, which may have affected teachers' willingness to share negative aspects of the interventions.

Implications for Practice

The findings from this study can inform practices in the areas of promoting acceptance of individuals with disabilities as well as cooperative learning groups. One implication for practice is related to teachers' knowledge and comfort level in discussing disability-related topics with children. Once participating teachers received information about how to talk to children about individuals with disabilities, they reported feeling more comfortable and confident engaging in these discussions during book reading. Considering that the number of children with special needs who attend general education classrooms is increasing, we need to provide teachers with the tools to address the needs of diverse learners, and to create learning environments that support acceptance and tolerance for all learners.

A second implication for practice is to utilize programs such as *Special Friends* with pre-service teachers. Disability awareness programs should be included in professional development offerings so that future generations of teachers are prepared to create classroom communities in which all children feel a sense of belonging, and in which similarities and differences are openly discussed and celebrated. In addition, in-service training that includes the sharing of disability awareness programs, the benefits of cooperative learning groups, and strategies for reading and discussing books enable practicing teachers to continue to develop new skills, gain knowledge, and reflect on their current practices.

A third implication for practice is related to teachers' use of cooperative learning groups. Structured activities with a clear outcome, such as those used in *Science* classrooms, may allow easier participation for children with less advanced play skills. However, open-ended activities such as those used in *Special Friends* classrooms give children opportunities to practice higher level play skills and to use play materials that represent individuals with disabilities (e.g., dolls with adaptive equipment). Teachers may need training and guidance to determine when to use structured or unstructured cooperative learning groups. Also, when teachers use unstructured activities, they may need to provide some children with additional supports or systematic instruction to help them succeed in less structured, open-ended activities. Another implication for practice is to scaffold the use of structured and unstructured cooperative learning activities. Using structured cooperative learning activities first, followed by the use of unstructured cooperative learning activities, might enable children to adjust to the general format of cooperative learning while providing teachers with opportunities to see children in action and learn about their challenges and strengths (leadership, sharing, turn-taking), so as to capitalize on these during less structured cooperative learning activities.

Conclusion

Teacher interviews are an effective strategy for providing social validation for interventions conducted in schools. Moreover, interview responses can illuminate specific benefits and challenges associated with school based research, for rich details provided by teachers can inform both practice and research. Finally, this type of data collection affirms the need for collaborative partnerships between researchers and teachers so as to better understand the nuances of intervention efficacy that cannot be easily obtained by more quantitative evaluation practices.

Authors' Note — The contents are solely the responsibility of the authors and do not represent the official views and policies of the funding agency, nor does publication in any way constitute an endorsement by the funding agency.

Declaration of Conflicting Interests — The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding — The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This article was made possible by Grant R324A080071 from the Institute of Education Sciences, U.S. Department of Education.

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