The cross-age tutoring experience for students with and without disabilities

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Abstract
This qualitative study describes the experience of a cross-age tutoring intervention for three PreKindergarten/Kindergarten-aged students with autism and their fourth grade general education tutors. Data were collected in an inclusive environment; the school library. Three fourth grade general education cross-age tutors were trained to use a simple, naturalistic least-to-most prompting strategy to support the young students with behavior goals in the library. A single case multiple baseline across participants design offers descriptive statistics about the young students' performance outcomes from the tutoring intervention and a constant comparison analysis of qualitative data gathered from observations of all students, students' written work and a research journal contribute to a more comprehensive understanding of this tutoring experience from the perspective of the children involved. Quantitative data indicated a sharp increase in the occurrence of the desired behaviors in the young children with the tutors present and a maintenance probe indicated the lasting effects of this intervention. Qualitative data suggested the cross-age tutoring experience created positive and powerful personal effects for both tutors and tutees; students were happy, engaged, responsive to one another, committed to one another and strong friendships were established.

Keywords
Peer-Mediated Instruction, Adaptive Behavior, PreKindergarten/Kindergarten, Autism, Student Experience, Insider Perspective

Introduction
Legislation and policy initiatives in the United States of America have called for a change in the way schools set up educational programs for young students with disabilities. Teachers of students with autism now have to prepare their students for a school experience that is less restrictive and more inclusive (Individuals with Disabilities Education Act of 2004, PL 108-446; National Council on Disability, 2004; No Child Left Behind Act of 2001, PL 107-110; President's Commission on Excellence in Special Education, 2002). Less restriction in schools means greater access for students with disabilities to the general education curriculum, to a wider array of experiences with others, to more appropriate models of communication, socialization and behavior and to more opportunities to practice and generalize critical life skills (Peterson & Hittie, 2003; Vaughn, Bos, & Schumm, 2011).

To prepare students with autism for an inclusive school experience, early intervention and training at the PreKindergarten and Kindergarten level with students aged three to six years, is critical (Trevarthen, Aitken, Papoudi, & Robarts, 1998; Wall, 2004). Generalization of training and skills, from a self-contained classroom into inclusive school settings is an area that teachers must focus and plan for, as children with autism may experience difficulty transferring their learning to different stimuli, environments and people (Bigge, 1991; Browder & Snell, 2000; Cooper, Heron, & Heward, 1987).

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Peer-mediated instruction and/or intervention (PMI/PMII) is a strategy in which peers (same-age or cross-age) are trained or guided to act as facilitators of change in other students (Garrison-Harrell, Kamps, & Kravits, 1997; Laushey & Heflin, 2000). General goals of PMI include teaching children how to talk and interact with each other, increasing the amount of interaction that occurs between students, decreasing dependence on teachers and supporting learning and/or generalization of new skills (Sperry, Neitzel, & Engelhardt-Wells, 2010).

PreKindergarten and Kindergarten-aged children often need instruction and support across a variety of learning domains as they adjust to school, indeed, some children especially benefit from individualized behavior support throughout the day to help facilitate appropriate, adaptive behavior to prepare them for learning in other areas (Bambara & Kern, 2005). Teaching and supporting appropriate behavior of students with autism can be complex and designing and implementing highly specialized and individualized programs for multiple students at the same time can present a challenge for teachers.

Teachers' experiences with the difficulties of behavior challenges may prevent them from leaving the security of their own classrooms to seek out inclusive opportunities with their students for fear of losing control of the class, encountering supervision and safety issues, or causing a disruption to others on the school campus. In addition, teachers are not usually given the personnel to deliver the individualized, systematic, repeated instruction required for effective behavior support of an entire class of students with autism at the same time (Giangreco, Broer, & Suter, 2011; Godsey, Schuster, Shearer Lingo, Collins, & Kleinert, 2008; Kohler & Strain, 1999).

Education programs for PreKindergarten and Kindergarten students with autism in the United States are oftentimes housed on the campus of a public elementary school, which grants teachers access to rich opportunities and environments in which to teach and prepare these young children for a successful inclusive education (Wall, 2004), yet the need for highly individualized behavior support for students with autism, coupled with teachers' fears of not being able to effectively support all of their students simultaneously outside of the classroom, may create a barrier separating the students with autism from accessing their school's other rich, inclusive environments and as a result they miss out on valuable inclusive learning opportunities (Fisher & Ociepka, 2009).

Findings from previous studies on effects of peer tutoring and other peer-mediated interventions have shown positive gains for students with disabilities across a variety of domains; for example, academic learning (Yawn, 2008), social skill acquisition (Thiemann, 2000), and independent functioning (Chiplin-Williams, 1997). Results from research on peer-mediated interventions indicate increases in desired behaviors, decreases in undesired behaviors, generalization of skills and high satisfaction with the intervention as reported by the people involved in it. Some studies on peer mediation have also reported great personal benefits for students who serve as tutors, including higher levels of perspective-taking and greater patience and tolerance for differences in other students (Ochs, Kremer-Sadlik, Solomon, & Gainer, 2001).

Studies on PMI have reported positive learning outcomes for children with disabilities as young as three years to five years of age in Preschool and PreKindergarten (McGee, Almeida, Sulzer-Azaroff, & Feldman, 1992; Takezawa, 2004) as well as elementary students ages five through ten years (Harper, Symon, & Frea, 2008; Kamps, Barbetta, Leonard, & Delquadri, 1994; Laushey & Heflin, 2000; Lawson & Trapenberg, 2007; Petursdottir, McComas, McMaster, & Horner, 2007;

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Pierce & Schreibman, 1997; Thiemann, 2000; Utley, Reddy, Delquadri, Greenwood, Mortweet, & Bowman, 2001). Both male and female tutors and tutees have participated in PMI as reported in the literature, as well as students from diverse racial and ethnic backgrounds including African American, Indian, Hispanic, European, Filipino, Pacific Islander, Vietnamese, Japanese, Turkish and Caucasian. It is apparent from the review of the literature that PMI is an effective strategy for male and female students of all ages, all ability levels and from diverse backgrounds.

This study addressed the following two research questions:
1) What effect, if any, does a cross-age tutoring intervention have on the progress of PreKindergarten/Kindergarten students' with autism Individualized Education Plan goals related to behavior, in an inclusive school environment?
2) What is the range of perspectives of general education fourth grade tutors and PreKindergarten/Kindergarten tutees with autism to the cross-age tutoring experience?

Participants

The researcher who conducted this study was also a full-time special education teacher in a public school who taught in a self-contained classroom for young students with autism. For this study, the researcher invited three students from her own primary school classroom who were PreKindergarten and Kindergarten level students, four to five years of age, with labels of autism spectrum disorder to participate. The other students who were invited to participate were three fourth grade general education students, nine to ten years of age, who had been coming into the primary classroom every day from the beginning of the school year to help out. These older students were the cross-age tutors.

Each of the young participants with autism showed assent to participate in this study through smiling, following the researcher or tutor to the library, absence of tantrum behavior, taking the researcher's hand to go into the library, walking ahead out of the door towards the library, or taking the cross-age tutor's hand for each tutoring session. Verbal assent to participate in this study was given several times during the study from the fourth graders as well. The fourth graders who volunteered for the study were able to choose which of the students with autism they wanted to be paired with through intervention and maintenance phases of the single case design inquiry. The same tutor/tutee pairs worked together throughout the study. All student names in this document are pseudonyms.

Tutor/Tutee Pair 1: Julie and Michael

Student Pair 1 was comprised of Julie, a fourth grade tutor, and Michael, a PreKindergarten student. Julie is a Hispanic female, 9.5 years of age and Michael is a Chinese male, 5.3 years of age. Julie is a very kind, helpful, and positive girl who goes out of her way to take care of the young students with autism. She is from a large family with older and younger siblings and one of her older sisters was a cross-age tutor for young students with autism several years ago. Michael is a very bright boy and is passionate about computers and video games. He requires extra support with language, attention, social interactions with others, and behavior. He loves exploring new places. When given a prompt to write about Michael in her journal, Julie wrote:

> "(Michael) is a nice kid I am teaching him English and Chinese. I already teached him 'nihow' it means hello in Chinese, and in English I taught him bye-bye."

Below her writing is a picture she drew of Michael smiling with a cloud above him and two lightning bolts coming out of the clouds on both sides of him. Written in the cloud were the words "Great kid".

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Tutor/Tutee Pair 2: Shawn and Mollie
Student Pair 2 was comprised of Shawn, a fourth grade tutor, and Mollie, a PreKindergarten student. Shawn is a Caucasian male, 9.9 years of age and Mollie is a Caucasian/Hispanic female, 4.7 years of age. Shawn is an extremely bright boy who is very thoughtful and conscientious. He often talks about helping take care of his younger cousins and is very interactive with the young students with autism. Mollie is an energetic emerging communicator who is learning to talk in one to two word phrases. She is a very friendly and sociable girl with familiar people and requires extra support with language and behavior. When given a prompt to write about Mollie in his journal, Shawn wrote:

"(Mollie) likes animal sounds but she does not like loud things."

Tutor/Tutee Pair 3: Janie and Jason
Student Pair 3 was comprised of Janie, a fourth grade tutor, and Jason, a Kindergarten student. Janie is a Caucasian female, 9.11 years of age and Jason is a Hispanic male, 5.5 years of age. Janie is a very sensitive and committed helper and is always working to make sure the young children are happy. Jason is a boy who is always moving and is passionate about electronics and engaging in rough and tumble play. He loves to play with the older tutors and requires extra support with language, attention, and behavior.

Design

The current project was conducted from a constructivist epistemology which values the perspectives of the participants who themselves construct their own social reality (Lincoln & Guba, 1985). A constructivist perspective was evident in this study through efforts to record and describe the students' perspectives, experiences, values, and beliefs about their cross-age tutoring experience (Koro-Ljungberg, Yendol-Hoppey, Smith, & Hayes, 2009). The research questions in this project inquired into the effects of an intervention as well as the personal experience of the students participating in the intervention therefore, "methodological congruence" (Morse & Richards, 2002, p. 23) is achieved through mixed methods research from a constructivist point of view. There was significance in the contribution to the literature by supporting students with and without disabilities to voice their own opinions, feelings and experiences with cross-age tutoring which will help others develop a holistic understanding of the different realities created by these particular students as they interacted in their social environment (Gall, Gall, & Borg, 2007). Information gleaned from this study will be helpful to teachers as they plan and prepare their students for an inclusive education and this work will empower children by placing them into the role of expert so others can learn from them (Norwich & Kelly, 2004).

A single case design, more specifically a multiple baseline across participants (Baer, Wolf, & Risley, 1968; Horner, Carr, Halle, McGee, Odom, & Wolery, 2005) with three phases (Baseline, Intervention, and Maintenance) assessed the effectiveness and lasting effects of the cross-age tutoring strategy. Qualitative data were collected throughout the study from and about both tutors and tutees in the form of written narratives of observations of tutoring sessions, student work samples (journals from the fourth graders only) and researcher notes written in a research journal. Constant comparison analysis (Charmaz, 2009; Glaser & Strauss, 1967; Leech & Onwuegbuzie, 2007) was used by the researcher to construct themes she discovered in the qualitative data. Through the collection of multiple forms of data simultaneously, the cross-age tutoring strategy was evaluated both in its power to affect change in student behavior and its personal effect on the participants with and without disabilities.

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Procedures

First, data on target behaviors of the tutees with autism were collected in the inclusive environment (library) without the cross-age tutors present to serve as baseline data. The target behavior for all three tutees was to follow the direction to get a book from the bookshelf in the library. An occurrence of the target behavior was recorded if the student, after hearing the verbal direction to "Go get a book." got up from the table, moved to the bookshelf and picked a book off of the shelf. The three students with autism were taken to the library individually, on separate occasions, for up to ten-minute blocks of time that were videotaped. The researcher provided four opportunities per session for the students to emit the target behavior within each session. When baseline data for each individual student became stable across at least three sessions or showed a decreasing trend, the cross-age tutoring intervention was introduced.

Throughout the school year, the researcher had been teaching disability awareness lessons in the general education fourth grade class of tutors as part of the cross-age tutoring program. It was during these 30-minute lessons that occurred once every seven school days that the researcher trained the tutors in the use of the least-to-most prompting strategy at the onset of the study (Cooper, Heron, & Heward, 1987; Wolery & Gast, 1984). Least-to-most prompting was the strategy the three fourth grade tutors were asked to use when they were working with the students with autism on their behavior goals in the library. The steps in least-to-most prompting were adapted to the level a fourth grader would understand and were presented to the tutors as follows:
1. Listen as I give your tutee the verbal direction to "Go get a book" and watch him/her; if the student follows the direction, give him/her praise/high five/tickle/etc.; if the student does not follow the direction then use your words again to repeat the same verbal direction.
2. If the student follows the direction after you use your words, give him/her praise; if the student does not follow the extra verbal directions you gave then give the verbal direction again AND use a gesture to get him/her to follow the direction.
3. If the student follows the gesture, give him/her praise; if the student does not follow the gesture then give the verbal direction again AND use a gentle physical prompt to guide him/her to follow the direction and then give him/her praise.

The second phase of the multiple baseline across participants design was Intervention. The same three cross-age tutors using the least-to-most prompting strategy with their assigned tutees in the library made up the Intervention phase. All of the cross-age tutoring intervention sessions in the inclusive environment took place in up to ten-minute blocks of time and were videotaped. On the same form, data was also collected on the tutor's implementation of the least-to-most prompting strategy for intervention fidelity. The criteria for completion of the intervention phase for each student was 75%-100% occurrence of the target behavior with or without prompts across three consecutive days.

The final phase of the design was Maintenance and included one probe. The Maintenance probe was collected at one month post the final intervention session.

Results

To address the first research question " What effect, if any, does a cross-age tutoring intervention have on the progress of PreKindergarten/Kindergarten students' with autism Individualized Education Plan goals related to behavior, in an inclusive school environment?" the dependent variables in this study (targeted behavior goals) were measured through researcher and trained

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observer viewing of at least seven videotaped tutoring sessions per student, use of data collection forms and graphing data collected on the form as described in multiple baseline across participants design research (Baer, Wolf, & Risley, 1968).

The independent variable in this study (cross-age tutors' use of least-to-most prompting strategy) was also measured through researcher and trained observer observation and use of a checklist. The videotapes were reviewed by the researcher and observer and data on the fidelity of implementation of the least-to-most prompting strategy were recorded on the checklist.

To gather data to answer the second research question "What is the range of perspectives of general education fourth grade tutors and PreKindergarten/Kindergarten tutees with autism to the cross-age tutoring experience?" videotaped tutoring sessions were reviewed and detailed observations of both tutors and tutees were written. The observations included thick descriptions about what was said between the tutors and tutees as well as thick descriptions of behavior, facial expressions, body language, gestures, engagement, eye contact and attention by the students. Fourth grade student written journals were collected every seven days and the researcher wrote in the research journal at least three times every week throughout the study. Data from these three sources (behavioral observations, student journals, research journal) were analyzed to address the second research question.

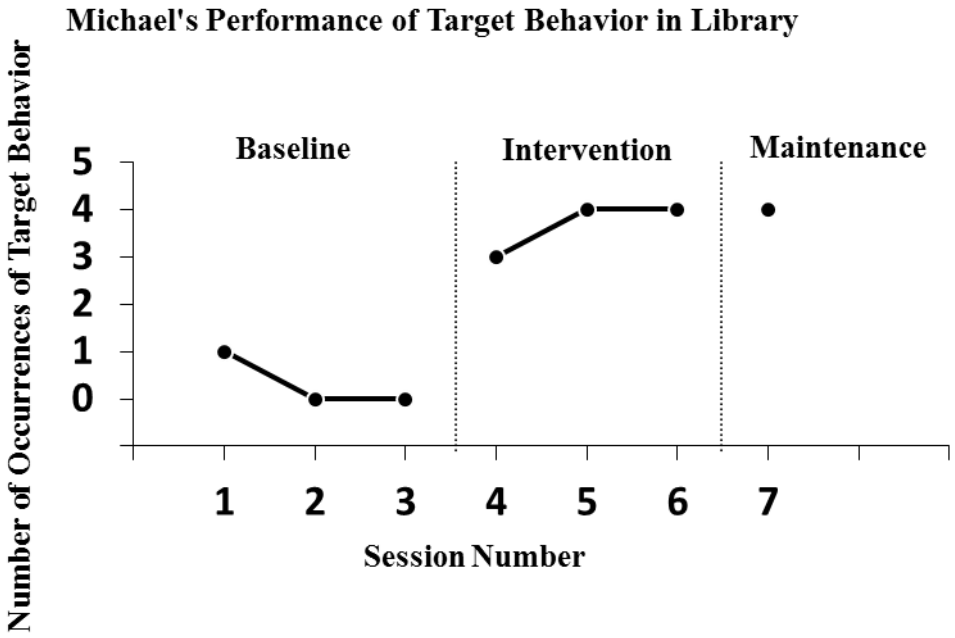

Figure 1: Graph of Michael's Performance of Target Behavior in the Library

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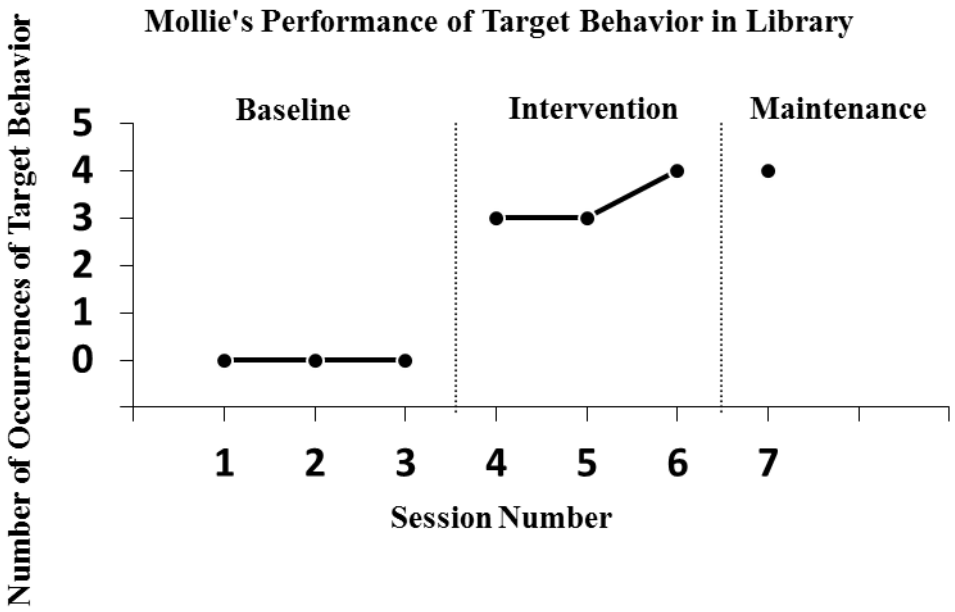

Figure 2: Graph of Mollie's Performance of Target Behavior in the Library

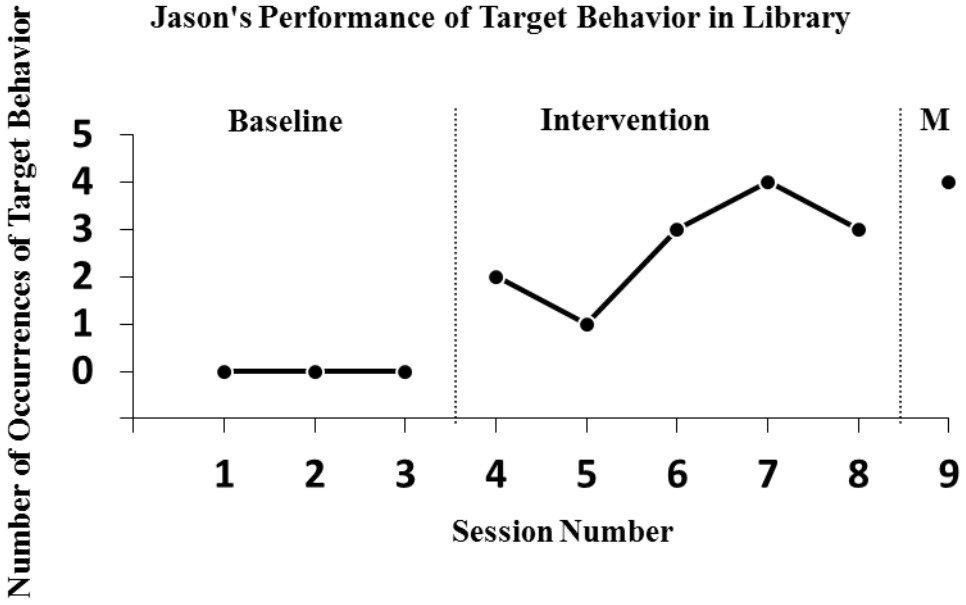

Figure 3: Graph of Jason's Performance of Target Behavior in the Library

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To ensure the least-to-most prompting strategy was delivered to the tutees by the fourth grade cross-age tutors correctly, intervention fidelity was also assessed during the Intervention and Maintenance phases of this study. The following table reports the results from the two phases of data collection on the independent variable as performed by the fourth grade cross-age tutors.

Table 2: Data on Independent Variable

Fourth Grade Tutor		Intervention Phase					Maintenance Phase
	Session	1	2	3	4	5	1
Julie	# of times strategy implemented correctly	2/4	4/4	2/4	NA	NA	4/4
	% of times strategy implemented correctly	50%	100%	50%	NA	NA	100%
Shawn	# of times strategy implemented correctly	4/4	4/4	4/4	NA	NA	4/4
	% of times strategy implemented correctly	100%	100%	100%	NA	NA	100%
Janie	# of times strategy implemented correctly	4/4	4/4	4/4	4/4	4/4	4/4
	% of times strategy implemented correctly	100%	100%	100%	100%	100%	100%

Table 3: Data on Inter-Observer Agreement of Dependent Variable (DV) and Independent Variable (IV).

	B 1	B 2	B 3	I 1	I 2	I 3	I 4	I 5	M 1
DV Tutee 1	+	+	+	-	+	+	NA	NA	+
IV Tutor 1	NA	NA	NA	+	+	+	NA	NA	+
DV Tutee 2	+	+	+	+	+	+	NA	NA	+
IV Tutor 2	NA	NA	NA	+	+	+	NA	NA	+
DV Tutee 3	+	+	+	+	+	+	+	+	+
IV Tutor 3	NA	NA	NA	+	+	+	+	+	+
Total # of Sessions in Agreement for DV	3/3	3/3	3/3	2/3	3/3	3/3	1/1	1/1	3/3

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% Agreement Per Phase for DV	9/9 x 100= 100% agreement for Baseline phase DV			10/11 x 100= 90% agreement for Intervention phase DV					100%
Total # of Sessions in Agreement for IV	NA	NA	NA	3/3	3/3	3/3	1/1	1/1	3/3
% Agreement Per Phase for IV	NA			11/11 x 100= 100% agreement for Intervention phase IV					100%

Qualitative Data Analysis

Charmaz (2009) offers steps for conducting a constant comparison analysis of qualitative data that the researcher followed, recognizing that this method is not a linear process; it is cyclic and the researcher constantly went back over data, codes, themes, and memos throughout the entire process of analysis.

1) Read and re-read all data from observations of behavior, student work, and the research journal, and open coded word-by-word, line-by-line, and/or incident-by-incident. Coding means attaching words or phrases to themes/concepts/constructs that the researcher saw in the data. The researcher decided which data were relevant to her codes and where the data fit into the codes. The codes developed help organize the wealth of data collected. In the current study, the written data was repeatedly read through and different colored highlighters and symbols were used within the text to organize and code the various themes discovered.

2) During the coding process, the researcher wrote memos from her own perspective about what the data was saying to her personally. This space was used to explore ideas, think about the data, analyze, compare, synthesize, find relationships and look for gaps. The memo-writing was done in an informal manner. In the current study, the researcher used her research journal to write memos from the qualitative data analysis.

3) Throughout the coding and memo-writing process the researcher compared data with data to find similarities and differences. Sequential comparisons across time and events were made. Outlines and visual aids were constructed to help organize, compare and synthesize the codes into categories and then into concepts. In the current study, the researcher made lists, columned tables, and visual aids with circles and arrows pointing to main themes.

4) Open coding turned into focused coding which provided codes that were more directed, selective and conceptual. These codes began to synthesize, explain and represent larger chunks of data. The researcher compared category with category and category with concept which ended with abstract concepts of how tutors and tutees experienced and felt about the peer tutoring process. In the current study, these concepts are reported as results along with direct quotes from both tutors and tutees. The researcher's outlines of codes/categories/concepts in the form of tables are included in the results section of this document for public disclosure of the analysis process (Anfara, Brown, & Mangione, 2002).

5) Throughout the process of the qualitative data analysis, quality indicator strategies recommended by McWilliam (2000), Leech and Onwuegbuzie (2007), Gall, Gall, and Borg (2007), and Anfara et al. (2002) were employed. These strategies included member checks, asking multiple researchers to code the data, data triangulation, prolonged engagement in the field, providing thick descriptions and creating an audit trail.

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A constant comparison analysis was done on each of the three forms of qualitative data and on all of the data as a whole and the researcher constructed concepts and themes she thought represented the wealth of data collected about each of the six participants of this study.

Observations of Students

The overarching theme that emerged from the observational data recorded on all three of the young tutees with autism was that a great, positive change occurred in their behavior in the library and they were happy and engaged as a result of the interactions with and support from their cross-age tutors. The overarching theme that emerged from the observational data recorded on all three of the fourth grade tutors was that the tutors were highly responsive and committed to their tutees when working with them. The data from these observations are reported here by student pairs.

Tutor/Tutee Pair 1: Julie and Michael

When Michael was first introduced to the school library during baseline sessions of the single case design, he was very excited to explore and play in this new environment. Michael was constantly smiling, looking around at all of the materials and decorations in the library and running from one end of the room to the other. Data recorded indicated that Michael was spinning around, skipping, jumping, wandering, chewing on his sleeve, acting out his passions (archery and baseball), crawling on the floor, laying on the table and moving his whole body in a dancing motion during all three baseline sessions, which the researcher/his teacher recognized as self-stimulatory behavior he exhibits when he is happy and excited. During baseline sessions in the library, Michael made only two verbal comments that were not directed at the researcher. Throughout baseline sessions, Michael only made eye contact with the researcher a few times, and did not stay near the researcher.

Physical prompts were necessary to get Michael to sit down at a table in the library so the verbal direction could be given to him to begin the baseline trials. The researcher had to go to Michael, take him by the arm and guide him to the chair, point to the chair and place him in the chair with several verbal and physical prompts to "sit down" as well as "stay in your seat". When the direction was given "Go get a book.", Michael took that direction as a cue to get up and engage in more self-stimulatory behavior (spinning, jumping and dancing). This same pattern of behavior continued throughout every one of the three baseline sessions and 12 trials; physical prompts to sit down at the table, then after the direction, happily getting up and engaging in self-stimulatory behavior on his own, away from the researcher.

During Intervention and Maintenance sessions in the library with Julie, a change in Michael's behavior was recorded. During Session one, Michael began to talk to Julie, making several comments about the library computers and he looked at Julie several times during each session. Both Michael and Julie were happy to be in the library, they were both smiling and laughing. Julie observed the self-stimulatory behavior Michael was exhibiting and ran after him so she could prompt him to get a book. Julie was very persistent in her role as a cross-age tutor she was assertive with delivering prompts, confident and committed to making sure Michael followed through with the direction to get a book. Other changes noted in the observations of Michael's behavior was that he voluntarily stayed in close proximity to his tutor during each of the Intervention sessions and the frequency in which he engaged in self-stimulatory behavior decreased. Michael spent much more time with Julie, staying near her and staying focused on the prompts she was supporting him with. The researcher/his teacher interpreted this behavior as

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Michael feeling safe, secure and interested in Julie so he was motivated to stay near her and engage less in self-stimulating behaviors. Michael was even lying in Julie's lap during Sessions one and three, which the researcher/teacher interpreted as affection and did not have to be prompted to sit at the table with her, he sat and stayed independently. It was written in an observation during Session two that after Julie excitedly praised Michael for getting a book, Michael looked directly at the researcher and at Julie, maintained eye contact with her for several seconds and smiled proudly for several seconds.

Tutor/Tutee Pair 2: Shawn and Mollie
When Mollie was first introduced to the school library during baseline sessions of the single case design, she was smiling, looking around and looking directly at the researcher as if waiting for a sign to be shown what to do. She was happy to be in the library but after a few trials, she began to put her head down on the table, hide her face and act shyly because she wasn't sure what was expected of her. During each of the twelve trials in three sessions during baseline, Mollie did not get up from the table at all. She did repeat several words from the researcher's verbal direction in Sessions one and two and looked at the researcher many times.

During Intervention and Maintenance sessions in the library with Shawn, a change in Mollie's behavior was recorded. When Mollie and Shawn were sitting at the table in the library together, Mollie was watching Shawn and was so eager and happy to follow his prompts. She was calm and comfortable and let Shawn guide her out of her chair, over to the bookshelf and to select a book. Once Mollie picked a book, she sat down on the floor to look through it and looked up at Shawn. He sat down on the floor next to her and they began to share the book together. This pattern of behavior was evident throughout the rest of the eleven trials across the three Intervention sessions and the four trials of the one Maintenance session; Mollie would wait for Shawn to verbally and gesturally prompt her, they would go to the bookshelf together, select a book and then sit down and read together. Mollie did not exhibit any more signs of shyness and her confidence grew; she would look at and maintain eye contact with her tutor the whole time, even reference him when he was behind her and they were both smiling and laughing out loud. Another change that was recorded was the increased number of words Mollie used. She repeated Shawn's directions many times across the three sessions, and Mollie used many words as they shared books together including "Look, see!", "cat, meow" and "dog".

Shawn was very comfortable working with Mollie in the library as noted in observations of his calm behavior, quiet voice, patience, smiles and attention on Mollie. Shawn was very responsive to Mollie, waiting on her to move before delivering another prompt, wanting to make sure she had time to follow the direction as independently as possible and repeating words Mollie was saying about the books they shared. Shawn showed his great liking of Mollie through instances of calling her by her nickname, talking in a high-pitched, sweet voice and engaging for minutes at a time in the books she selected letting her lead their interactions.

Tutor/Tutee Pair 3: Janie and Jason
When Jason was first introduced to the school library during baseline sessions of the single case design, he was happy to be there and excited to run around, climb into bookshelves and search for things he was interested in. Jason did not stay near the researcher and wanted to be left alone to explore and play on his own and in his own way. He did not look at the researcher or make any verbal comments. To begin the trials, the researcher had to go and get Jason, sometimes chase him, physically prompt him to sit down by taking his arm or carrying him, point at the chair, place

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him in the chair and verbally prompt him many times to "sit down", "stay at your seat" and "wait". When the researcher gave the direction to "Go get a book" Jason took the direction as a cue to run off and play on his own. This same pattern of behavior maintained throughout the three baseline sessions in the library; full physical prompts to sit down and then running around and very energetic play on his own when given the direction to "Go get a book". During Session two, Baseline, Jason wanted to play on the library computers and when the researcher tried to physically prompt him back to the table he engaged in a very aggressive and disruptive tantrum. He was crying, screaming, pounding his head on the chair, kicking, and flailing; he took his shirt off and ran away.

During Intervention and Maintenance sessions in the library with Janie, a change in Jason's behavior was recorded. Jason was still very active in the library and wanted to run around and climb into the bookshelves but as his tutor became more comfortable with his behavior and adapted her prompting, he began to look at her more, stay with her more and then during Sessions three, four, and five he was smiling, happy, engaging with Janie, maintaining eye contact and acting proud of himself after performing the target behavior. He was smiling, focused and laughing when his tutor was cheering for him and praising him.

Observations written about Janie, the tutor, indicate a change in her behavior as well during the Intervention phase working with Jason in the library. In Session one, Janie seemed very nervous when watching Jason's active behavior in the library; her face had a serious expression, she was looking at the researcher often as if she wanted to make sure she was doing what she was supposed to and she was hesitant about physically prompting Jason because his behavior was very over-active; he was resistant to her prompts at first. Despite this nervousness, Janie stayed very positive, patient and encouraging with Jason, saying in a calm, quiet voice, "Please Jason, go and get a book!". During Session two, it was observed that Janie acted a little more confident and less nervous, being more active with Jason, following him more closely around the library and guiding him in a more assertive way. In Sessions three, four, and five, Janie, on her own, adapted the way she delivered the prompts to Jason; she was more assertive and faster in the delivery of the prompts, especially the physical prompts. It seemed that Janie was learning that since Jason was constantly moving at a face pace, then she needed to deliver her prompts to him at just the same fast pace. Once Janie was successful in helping Jason perform the target behavior, she really began to smile, show pride in herself and in Jason and become more confident. She looked less at the researcher for guidance and focused more on Jason and was more energetic and motivated to work with him in every trial. By Session four, both Janie and Jason were looking at each other, laughing together and celebrating Jason's performance of the target behavior by clapping, tickling and cheering.

Fourth Grade Students' Written Work

The researcher read and re-read the written responses, began with word-by-word open coding and found the data in the journals related to two major categories; how the tutors felt about themselves as cross-age tutors and how the tutors felt about the young students with autism they work with.

Based on the analysis of the focused codes from the first category from the written journals, the researcher developed four major themes surrounding how the tutors felt about themselves as cross-age tutors: 1) the tutors felt important being a cross-age tutor, 2) they were confident in the work they did as a cross-age tutor, 3) they felt protective of the young students with autism who they work with and 4) they felt connected to and committed to the young students.

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All three of the tutors wrote about their feelings as a cross-age tutor and all three students wrote comments in their journals that indicated tutoring made them feel important. All three fourth graders also wrote confidently and with assurance about the work they did with their tutees and all three fourth graders wrote about protecting their tutees from harm. All three tutors' writing also spoke of their important connection to the tutees; they were deeply invested in the young children and felt a strong commitment to them. The table below lists the four themes the researcher constructed about the first category developed from the written journals of the fourth grade tutors and provides direct quotes from the fourth graders' writing that the researcher felt supported the established theme.

Table 4: Category 1 Themes from Tutors' Written Work

Themes From Category 1: How Fourth Graders Felt About Themselves As a Tutor	Examples of Tutors' Written Words That Support Theme
Important	"means a lot", "really like to help", "good person", "like teaching little kids", "love myself", "useful", "want to help", "they look up to me", "feel different and I'm proud"
Confident	"like a real teacher", "show them", "I communicate", "already teaching him", "I taught him", "I know what to do", "I think I can"
Protective	"not like labels", "always don't judge people", "should not be labels", "hate how people make fun of people, it annoys me"
Connected and Committed	"love to work with (student)", "love the kids", "good", "really fun", "I'm fascinated with the kids I teach", "would hang out with them", "happy", "like working", "awesome"

The themes constructed about the way the tutors felt about themselves are similar to feelings reported from tutors in other studies about peer mediated instruction between students with and without disabilities. Tutors in the Yawn (2008) study discussed the importance of "Helping someone else learn to read better" (p. 118), which seems they felt their work as a tutor was important, and another comment "…I will be looked up to" (p. 118) seems to indicate the tutor's confidence in himself because of his work with others. In Tekin-Iftar's (2003) study, tutors reported enjoying the intervention they used with students with disabilities and expressed their wishes to participate in tutoring again in the future; this wish seems to show the tutors commitment to the practice of tutoring and to their tutees.

Based on the analysis of the focused codes from the second category from the written journals, the researcher developed three major themes surrounding how tutors felt about the young students with autism who they work with: 1) tutors were focused on what the young students could do; their strengths, 2) tutors were focused on what the young students like and 3) tutors had warm and positive judgments about the young students with autism.

All three of the tutors wrote about their feelings about the young students with autism and all three wrote comments that fell under each of the themes named above. Despite the skill deficits evident in all three tutees with autism in the language/communication, behavior and social/interaction domains, not one of the tutors wrote about what their tutees cannot do. The fourth graders' writing was full of statements of what the young children's strengths were and what they could do.

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The fourth graders also write specifically about what their tutees liked; their specific interests and passions. General observations were also evident in the fourth graders' writing that indicated their overall positive feelings about their tutees. The table below lists the three themes the researcher constructed about the second category developed from the written journals of the fourth grade tutors and provides direct quotes from the fourth graders' writing that the researcher felt supported the established theme.

Table 5: Category 2 Themes from Tutors' Written Work

Themes From Category 2: How Fourth Graders Felt About the Young Students with Autism	Examples of Tutors' Written Words That Support Theme
Focus on Strengths	"they run and play", "we always jump on the trampoline", "loves to sing and play with everyone", "he always sings songs in class", "loves dancing"
Focus on Interests	"likes to smile", "likes gummies", "likes to hold hands", "loves Thomas the Train and airplanes", "likes animal sounds", "loves the table and balls"
Positive Judgments	"sweet", "kids are sweet and nice", "very special", "he's a nice kid", "great kid", "she is a good person to me", "the happiest person in class", "so so so so so so cute", "very neat", "always has a smile and never pouts", "they have more energy"

The themes constructed about the way the tutors felt about their tutees with disabilities are similar to feelings reported from tutors in a study conducted by Bensted (2000) where a tutee was described as "very focused, kind, in general, more on-task and focused" (p. 47) and another tutee described as "cooperative, vocal, assertive, confident" (p. 47). It seems that the tutors in the Bensted (2000) study also noticed their tutee's strengths and had positive judgments about them as well.

The qualitative data analyzed from the observations of student behavior written from watching the videos also support the seven themes outlined in this section.

Research Journal

The researcher read and re-read the written responses in the research journal, began with word-by-word open coding and found the data in the research journal falling under two major categories; tutee behavior and tutor behavior. Specific phrases and words were pulled from the research journal and copied onto another page, creating a list of concepts under both of these categories. The concepts were analyzed and the researcher constructed a theme for the data under both of the categories: tutees feel excited about the cross-age tutoring program, and tutors are very responsive to their tutees.

Tutee Behavior

The main theme regarding the tutee's behavior throughout the course of this study that was evident in the research journal was the young students' with autism excitement about visiting the school library and working with their cross-age tutors. All three of the young students exhibited excitement through smiles, laughter, jumping up and down, energetically making their way to the

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library, making eye contact with their tutors, and staying near their tutors for most of the time they were together. When the researcher asked Michael, "Do you want to go to the library?", he stopped what he was doing, looked directly at the researcher and quickly responded, "Yes!" as he ran for the door. Usually, getting a response to a question directed at Michael takes several verbal prompts because his attention can be difficult to get.

Excitement was evident in Mollie and Jason about going to the library with their tutors as they skipped, hopped, sang and held their tutors hands as we transitioned across campus to the library. Prompts to transition to the library were not necessary with these students, they walked independently and stayed with their tutors the whole way because they wanted to go to the library and they were focused on getting there. Jason, Janie and the researcher developed a fun routine on their way to and from the library; Jason would hold hands with Janie and the researcher, say "one, two, three, jump!" and Janie and the researcher would pull him up so he could jump high in the air. Jason would make eye contact with Janie, smile, laugh and prompt her to continue this game during the entire transition across campus. This fun, shared experience was a significant event as Jason usually prefers to be on his own.

Tutor Behavior

The main theme regarding the tutor's behavior throughout the course of this study that was evident in the research journal was the great responsibility tutors showed towards their tutees. All three fourth grade tutors were constantly watching their tutees, looking into their faces, holding their hands, asking them questions, repeating what they said, keeping them safe and playing with them. The tutors constantly watched over their tutees, protected them, and cared for them; through their high level of responsiveness, it was evident that the tutors felt responsible for and committed to their tutees. A powerful event recorded in the research journal happened on the school's Picture Day. The young students with autism were having a very difficult time waiting for their turn to get their pictures taken in the cafeteria; they were crying, screaming, crawling around on the floor and trying to run away. The fourth grade class came into the cafeteria for their turn to take pictures, observed what was happening with the young students and without being asked the fourth graders came right over, sat down in between the young students and began to soothe them, entertain them, redirect them and hold them in their laps to help them wait comfortably.

Another example of the fourth grade tutors' feelings of responsibility recorded in the research journal was every time the tutors saw the young students on the school campus they wanted to hug them and make sure they were happy. Every day, the young class entered the cafeteria for lunch at the time the fourth grade class was leaving the cafeteria and every day the fourth grade tutors held their arms wide open and waited for each of the tutees to come and give them a big hug, then they would direct them into the lunch line so they would get their lunch. Every day, both the tutors and tutees had big smiles on their faces, they both embraced each other and the fourth graders always gave positive remarks to the young students like, "Have a good lunch!", "I miss you!", "I can't wait to see you later!" and "I like your new shoes!". This shared experience became a routine that both tutors and tutees looked forward to every day.

A final example written in the research journal of one of the tutor's responsible acts was the way Janie learned from and adapted the least-to-most prompting strategy on her own to better suit her energetic and active tutee, Jason, to make sure he was successful in performing the target behavior. Janie watched Jason closely during the first Intervention session, she attempted the strategy the way she was taught by the researcher but was not having success so she changed her own behavior

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in response to her tutee's behavior. She altered the strategy so it would fit Jason, so the strategy would work for him and she was successful. Her response to Jason when he performed the target behavior was so full of excitement, pride and happiness that the researcher believed that response to be a main reason Jason continued to perform the target behavior. Janie's responsiveness and positive reaction to Jason's behavior reinforced him and motivated him to want to perform the target behavior again and again for his tutor.

Table 6: Categories from Research Journal

Categories	Themes	Examples from Research Journal that Support Themes
Tutee Behavior	Excitement	"loves going to the library" "with eye contact" "hopefulness" "skips and hops as we walk and is smiling, happy, and carefree" "lots of language" "comes with me voluntarily and happily" "enjoyed going" "responded so positively" "calm" "behavior was appropriate and they were happy"
Tutor Behavior	Responsibility	"they soothed the kids, redirected them, played with them, talked to them, tickled them, and wanted them to be happy" "they were responsible" "trying so hard" "so patient" "asked him for a hug" "so forgiving and really understands that (Jason) is different and can't help his behavior" "surprisingly adept" "so the young kids can see their faces, see their gestures" "really giving young kids a chance to do the skill independently" "patiently wait again and again (and watch)" "so hopeful the young kids will do it" "into the moment, into the experience"

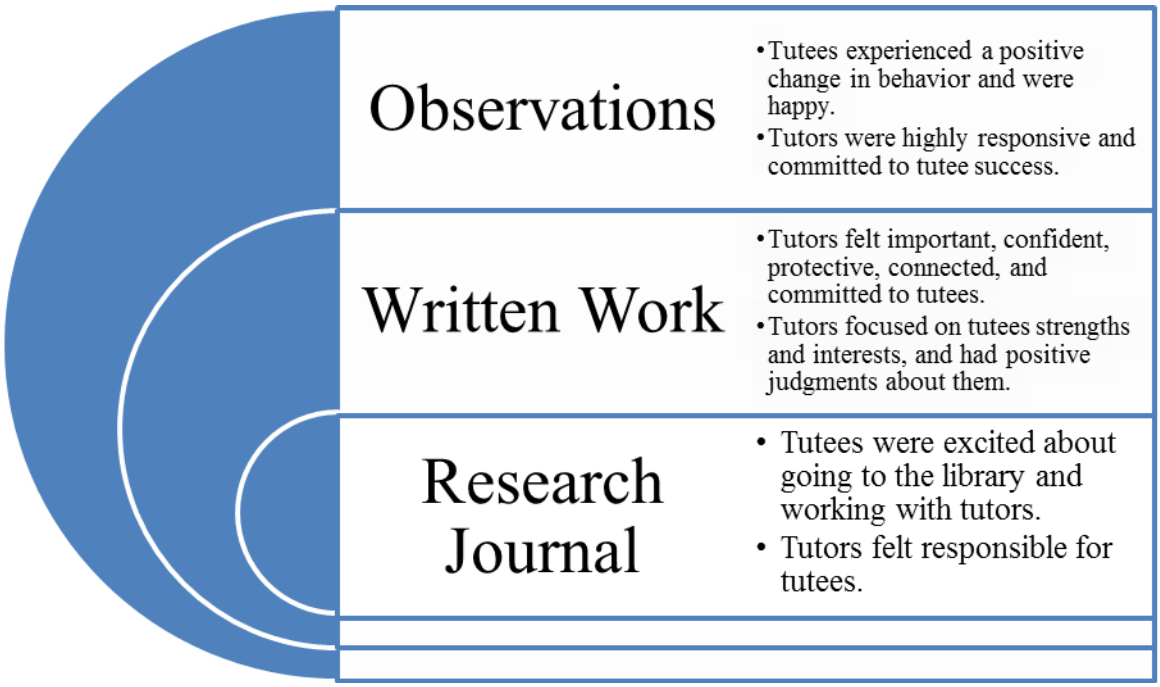

Figure 4: Themes from Constant Comparison Analysis of All Qualitative Data

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Discussion

From the analysis of all of the data collected in this study, it is evident that cross-age tutoring is an effective intervention for young students with autism and all six of the student participants in this study felt happy and excited to work together. Students were responsive to and responsible for one another and they felt a strong commitment to their role as a tutor or tutee and to one another.

The themes that emerged from the qualitative data related to how being a cross-age tutor made students feel indicated that this inclusive experience brought them feelings of importance, confidence, protectiveness of the young students and connectedness to the young students. An example of one tutor's writing explained the importance and confidence she felt working with the young children with autism:

> "I help them stay focused and show them how to be nice to others. I help them by read books to them so they can learn to read. And I help them speak. I love helping them!"

Another tutor wrote about the challenge of teaching young students with autism, but showed her confidence in believing she can accomplish this challenge by writing:

> "I am already teaching him he is almost trying to say 'teacher' right now all he can say is 'no'. I am still working on it I will not give up with faced with a challenge. Never!!!"

The third tutor expressed his belief of the importance of what he did with the young children and his confidence in his work with them by writing:

> "They look up to me so if someone hits someone I say stop and they stop."

The themes that emerged related to how tutors felt about the young students they worked with were centered around students' strengths, students' interests and positive judgments about the students with autism. An example of one student's writing about Mollie:

> "(Mollie) loves to sing and play with everyone, but she doesn't like loud noise."

Another tutor picked up on a tutee's passion for trains:

> "He loves Thomas the Train and like to play with Sam."

The fourth grade tutors' writing was full of positive comments and judgments about all of the tutees with autism and the other students in the PreKindergarten/Kindergarten class:

> "When he talk he just makes noises. I love (Ollie)."
>
> "He is sleepy. He like to smile. He love Lily and like kisses. You have to pick him up off the floor. (Adam) is sweet, loves to play. He like gummies."
>
> "I would want to work with him this year. (Michael) is nice he always has a smile and never pouts, and he loves table and balls."
>
> "I would hang out with them because they are fun and nice."
>
> "…because they have more energy."
>
> "(Adam) is a sweet kid he enjoys playing and he a nice kid and we always jump in the trampoline, even if he doesn't talk he still an awesome kid."
>
> "(Ivan) is a nice kid he like to hug me and he like to read to me. I love the kids."
>
> "He's like the happiest person in class. I love (Ollie) he always sing songs in class."

It is apparent from listening to their words that these fourth grade tutors felt very important about their role as a tutor for young students with autism and it is evident in their writing how much they know and like the students and how positive they felt about this experience.

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Conclusion

Through a constant comparison analysis of qualitative data collected in this study, the events that took place between the students involved in the cross-age tutoring program were written about, analyzed, interpreted and discussed in a deeper way and from a variety of perspectives which enhances the understanding of what really happened to these students throughout the course of this study. Inherent in a study about a peer-mediated intervention in a school setting are a variety of variables and different understandings and feelings from all of the people involved. The qualitative design allows for such complexity to be better revealed and for voices of all participants to be heard. The quantitative data reported in this study suggests that cross-age tutoring is an effective strategy for supporting individualized adaptive behavior goals of young students with autism in an inclusive environment and the addition of the qualitative data broadens our understanding that a lot more happened in this tutoring program than just increases in the performance of target behaviors in the three tutees. Participation in this program made six students with and without disabilities happy and excited to spend time together, it made the tutors feel important and it connected the students in such a powerful way that the young students with autism were more responsive to their tutors and the fourth grade students felt protective and responsible for their tutees. Strong bonds were formed between the tutor/tutee pairs and they all became friends.

A solution for teachers of young students with autism and low incidence disabilities that addresses the challenge of supporting student behavior in order to access more inclusive opportunities is cross-age tutoring with general education students. In this study, the implementation of a cross-age tutoring intervention, more specifically teaching cross-age tutors to use a least-to-most prompting strategy, successfully enabled students with extensive behavior support needs to access an inclusive environment and successfully perform adaptive behaviors that made that inclusive experience meaningful and educational.

Cross-age tutoring met the needs the students had for highly individualized behavior support, it helped alleviate teacher concerns with behavior because the tutors delivered the prompting strategy with fidelity, it lifted a barrier to an inclusive opportunity in the school library and it offered general education students a valuable learning experience, all at the same time. The data collected in this study also suggests that not only can cross-age tutors support young students' behavior but cross-age tutors can teach young students new adaptive behavior skills. This is evident through the documentation of the specific prompts that were necessary for the fourth grade tutors to use with their tutees. All three tutees required less intrusive prompts from their tutors during the course of the study, suggesting the tutees were learning the skills and performing them more independently.

Not only is this intervention a powerful behavior change tool but the personal effects for all of the children involved are significant. Young students with autism who participated in this study who usually do not make or maintain eye contact did so with their tutors; these students who typically play by themselves and walk away from others were referencing their tutors, sharing experiences with them and spending whole tutoring sessions in close proximity to the tutors, sometimes even being affectionate. The students with autism who sometimes have behavioral outbursts and who do not use many words throughout the day were calm, comfortable, responsive and repeatedly talking to their tutors during their time together in the library. And from the words of the fourth grade tutors:

"I love it! It is fun! It makes me happy. I feel good. It makes me feel like a real teacher."

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"I help them stay focused and show them how to be nice to others. I help them by read books to them so they can learn to read, and I help them speak. I love helping them!"
"I feel like I am nice to others and a good person."
"I feel useful to the world, not like before I felt useless to the world."

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