Photovoice

Engaging Children With Autism and Their Teachers

Christi R. Carnahan

Imagine Mark, a kindergarten student with autism. He doesn't communicate verbally, but he uses one or two pictures to make requests. He runs from one classroom location to another, tapping objects on his desk and walls and moving his eyes laterally away from learning materials. Mark rarely initiates interactions with peers or adults in even the most structured learning situations.

Now, imagine another child of similar age. He sits in a chair looking appropriately at his learning materials with no adult support. When approached by a peer, he looks at a set of photographs, engaging in a joint attention activity for several minutes. He points to the photograph, looks to an adult sitting at the table, and looks back at the pictures.

The two students sound very different. The first child sounds socially isolated; the second child is beginning to engage in interactions with peers. Yet, both scenarios describe the same child. How could the child seem so distracted and disengaged in one description and interacting with a peer in the next? A process known as photovoice facilitated such changes for students with autism and their teachers. This article describes how a visual teaching method known as photovoice led to improved engagement with peers and learning materials for two young boys with autism. The article also describes how teachers used photovoice to articulate their strengths and needs related to teaching students with autism and other disabilities. Through the photovoice process, students experienced inclusion and participation in the school community.

Photovoice (Kroeger et al., 2004; Wang & Burris, 1994, 1997) is an educational action research tool that embraces visual communication through photography and allows for individualization. The process begins with participants photographing personally relevant objects, items, or activities around a specific topic or issue. Once the photographs are developed, each participant chooses a subset of pictures to share. The participants come to a series of scheduled meetings to engage in dialog about the photographs. Group interactions address the relation of each picture to the designated theme, the issues depicted in the photograph, and the relevance of those pictures to stakeholders' lives.

In one phase of this study, five teachers used photovoice to document their experiences of including students with autism and other disabilities in general education settings. The teachers photographed children, related service staff, and instructional materials that symbolized their experiences. We met several times as a group to discuss the photographs and listen as each teacher narrated her experiences. During these discussions, the teachers described their needs related to improving outcomes for students with autism. The teachers also offered strategies to improve learning environments, increase engagement, and promote student success.

Concurrent to the teacher photovoice sessions, students with autism and their peers used photovoice to engage in group experiences. Two boys with autism who previously experienced little engagement with others participated in structured photovoice activities with typically developing peers. The students photographed and shared items and people of personal significance. During the photovoice sessions, students with autism increased attention to tasks, adults, and peers in the environment. They initiated and were the recipients of sustained interactions with others.

The study suggests that by shifting the emphasis of instruction to include strategies that align with student learning styles, outcomes for students with autism improve. Decreasing the reliance on verbal instruction and increasing the use of visual learning materials created opportunities for students with autism to engage in joint attention activities

TEACHING Exceptional Children, Vol. 39, No. 2, 44–50.

and increase attention to learning materials. The findings from this study offer concrete suggestions for teacher education, building level supports, and specific strategies that promote social and academic engagement for students with autism served under the moderate to intense categories in the current special education system. (See Box "Why Visual Teaching Strategies? Reframing the Problem Context.")

Decreasing the reliance on verbal instruction and increasing the use of visual learning materials created opportunities for students with autism to engage in joint attention activities and increase attention to learning materials.

The Photovoice Study

Phase 1: Teacher Photovoice

Participants and Setting. Five teachers from a large, suburban school district in Ohio participated in the teacher photovoice sessions. Armed with cameras, the teachers set out to tell their stories of including students with autism through photography over a period of several weeks. As briefly described earlier, the teachers used cameras to photograph students with disabilities in the general education setting. Four of the teachers photographed students with autism in their general education classrooms. The fifth teacher photographed a student with Down syndrome in her general education classroom. The teachers also took photographs of other individuals, activities, or materials that symbolized their experiences of inclusion. For example, one teacher took photographs of the related service staff working in her room. Another teacher photographed the visual schedules she used with a particular student. Once the photographs were developed, each teacher selected two to three pictures to share at each photovoice meeting. The photovoice group met four times over the course of 8 weeks. During the photovoice meetings, each teacher described and shared her photographs. The descriptions sparked conversations fuelled by facilitator and participant questions and comments.

Emergent Themes. Using transcriptions from each meeting, I (the facilitator) coded thought units into three different categories with subthemes (Strauss & Corbin, 1996). Using the coded data, teacher participants discussed the significance of the themes and used the themes for problem solving. The themes included (a) issues of membership and belonging, (b) the child's influence on the environment, and (c) professional development (see Table 1).

Photovoice allowed educators to voice their own practices and development in including students with autism. Though it was not always easy, they began to make their own paths in the process of including students with autism. Perhaps even more important, they were able to articulate that path and the comfort of experience. A kindergarten teacher passionately claimed,

> I'm much more comfortable. I don't feel so threatened. I don't feel so stressed. I feel I'm more accepting and more comfortable . . . I'm not necessarily getting more outside help, but I'm finding my own little way of dealing with the kids, and I'm excited about it.

Planning for the teacher photovoice sessions sparked questions about a small group of children who had very few, if any, inclusive experiences throughout their school day. Questions developed about the implications of

Why Visual Teaching Strategies? Reframing the Problem Context

Though most children with learning differences are included in and have access to general education classrooms, they often fail to achieve success (Individuals With Disabilities Education Improvement Act, 2004). One reason for the lack of success is the fact that children with disabilities must adapt to a system never intended to serve them (Hitchcock, Meyer, Rose, & Jackson, 2002). The result is disengagement and failure to learn. When a child is not successful in the general education classrooms the focus is often on the student rather than the learning context (Hitchcock & Stahl, 2003). To promote positive learning outcomes and engagement educators must refocus their attention from deficits of individual children to problematic context (Council for Exceptional Children, 2005; Dunlap, 2004). Such a shift is possible by adapting environmental arrangements and engaging in specific teaching strategies (Carr et al., 2002; Mesibov, Browder, & Kirkland, 2002) that meet student needs. In order to organize an environment and teaching methods to promote learning and engagement, it is imperative to understand what about the learning environment is problematic or poses barriers.

General education classrooms often use verbal language as the dominant means of instruction (Wilkinson & Silliman, 2001). Such verbal teaching strategies create a discrepancy between student learning needs and the learning context. Many children, including students with autism, have weaknesses in verbal language (Council for Exceptional Children, 2005; Mesibov, Shea, & Schopler, 2005; Rose & Meyer, 2002;). Verbal instruction is ineffective for these students (Grandin, 1995a; 1995b). Because of the discrepancy, many students with autism are excluded from instruction and the scripts that compose daily interactions in classrooms. As a result, classroom interaction and learning is reduced.

Environmental adaptations that promote increased attention and engagement and align with the learning characteristics of children with autism have been identified (Iovanne, Dunlap, Huber, & Kincaid, 2003). One example of such an accommodation is the use of visually structured learning environments (Mesibov et al., 2005; Tissot & Evans, 2003). The box, "Strategies That Promote Learning and Engagement for Students With Autism," offers an overview of visually-based environmental adaptations.

Table 1. Themes Emerging From Teacher Photovoice Sessions

Category	Definition of Category	Subthemes
Membership and belonging	The belief of all relevant classroom stakeholders that the child with autism is a valued, welcomed member of the classroom.	Teacher influence Relationship development Teacher ownership Other general comments
Child's influence on the environment	This broad category refers to all of the aspects influenced by including a child with autism in general education settings.	Diversity Resource allocation Code switching (the ability to increase or decrease verbal language based on the child's comprehension level) Other general comments
Professional development	Professional development opportunities refer to those activities that support general education teachers in creating learning environments for students with autism.	Coaching (Joyce & Showers, 1982; Showers & Joyce, 1996) Negative cycle (teachers who resist or feel uneasy about their ability to work with students with significant needs do not have opportunities to work and develop the skills to teach such students) Reflections on teaching and teacher expertise

photovoice for students with profound needs. If the ultimate goal of education is to help students become independent, contributing members of a community, could photovoice also create positive academic and social interactions for students on the boundaries?

Phase 2: Student Photovoice

Participants and Setting. Photovoice created opportunities for increasing engagement for children with autism. The visual, nontext-based materials and the opportunities for students to photograph items and people of personal significance aligned with the learning preferences of the students with autism. The photographs represent intense interests, a key strategy for increasing engagement and activity involvement for students with autism (Baker, 2000). Moreover, the pictures acted as a vehicle for these students to share their interests with others. Photovoice capitalized on student interest and learning strengths using photographs of actual objects, places, or individuals.

Two male kindergartners identified with autism, Mark and Patrick, and five typically developing peers participated in photovoice sessions led by the special education teacher. The students with autism, Mark and Patrick, participated in a full-day school program where they received educational services in a self-contained resource room for the majority of the school day. Both boys participated in general education settings for an average of 20 min to 1 hr per day with adult support. In the general education settings and the resource room, the students received continual adult prompting to engage with their peers or to participate in academic activities (see Table 2).

Each child received a camera and an opportunity to photograph items of interest in both the home and school environments. All students received some adult support in the photography process. In order to determine specific items of interest for students with autism, teachers and parents paid close attention to preferred toys, activities that increased engagement, and food preferences. The students then participated in a session in which they selected approximately 10 pictures to share with the group. The session was designed to provide all students with the opportunity to work independently, side by side with peers. After creating a photo-journal, each student had the opportunity to share his or her pictures with the group.

Emerging Themes. During the photovoice sessions, Mark and Patrick demonstrated increased interest in the learning materials or photographs. The two boys also became more independent during group activities. Once it was clear that the students experienced increased engagement and participation with others and with learning materials, I analyzed the steps that facilitated the process. After viewing videos of the student photovoice sessions, two recurrent themes were clear: (a) removing barriers to participation through structured membership activities and (b) incorporating topics of interests from student photographs.

Removing Barriers Through Structure and Environmental Arrangements. Intricate details of classroom projects or activities often make participation difficult for children with autism. Structures and systems the boys with autism used on a daily basis in the resource room were incorporated

Table 2. Comparison of Learning Experiences Using Photovoice With Two Students With Autism

Student 1: Mark Learning Experience	Grade Assignment: Kindergarten Before Photovoice	During Photovoice Sessions
Communication (communication mode, initiation, and joint attention)	• Mark exhibited no verbal communication skills. His primary mode of communication was a modified picture system. Specifically, he communicated during structured activities using one or two pictures for preferred items such as snacks or sensory tools. • Mark initiated few interactions with adults or peers outside of highly structured, preferred activities such as snack. • Mark needed continual visual, verbal, and physical prompts to engage in joint attention activities with peers or adults outside of the photovoice sessions.	Mark engaged in joint attention activities that incorporated pictures from his photovoice journal. He engaged in these activities for approximately 5 min at a time without verbal or physical cues.
Behavioral needs (behaviors impeding availability for learning)	• Mark exhibited self-stimulatory behaviors including putting hands in his mouth, tapping materials with his hand in a rapid manner, and throwing academic and leisure materials.	When Mark looked at his photovoice journal, he did not put his hands in his mouth. Although he tapped the pictures on several occasions, the tapping did not detract from his attention to the activity.
Academic and IEP objectives	• Instruction provided at a preacademic level. • Sample target skills and objectives included a. Increasing attention to task. b. Following one-step directions. c. Imitating functional skills (i.e., sharpening a pencil) in a one-on-one setting. d. Sorting up to four categories. e. Tracing or forming beginning lines to form the letters of his name.	Photovoice was not used to specifically address any one content area or academic objective. However, Mark did demonstrate sustained attention with learning materials and joint attention with peers and adults during photovoice. The team began using real photographs as teaching tools. In addition, the photovoice process provided insight into motivating items such as the playground.
Student 2: Patrick **Learning Experience**	**Grade Assignment: Kindergarten** **Before Photovoice**	**During Photovoice Sessions**
Communication (communication mode, initiation, and joint attention)	• Patrick used an augmentative device (voice output) to communicate. In structured settings, he used the carrier phrase, "I want," to form a three-word sentence to make requests. He demonstrated the ability to imitate some sounds, but did not use verbal expression to communicate with others. • Patrick engaged in joint attention activities for brief periods. Most joint attention activities were physical in nature.	During the photovoice activities, Patrick initiated joint attention activities with Mark and the other kindergartners. He initiated joint attention during small group sessions and with individual students.
Behavioral needs (behaviors impeding availability for learning)	• Patrick exhibited self-stimulatory behaviors such as putting fingers in his ears and humming, closing his eyes during activities, hanging his head between his legs while dangling his arms near his feet.	Patrick engaged in few self-stimulatory behaviors during the photovoice sessions. He never closed his eyes when looking at his photovoice journal or his peers' journals. He did hang his head between his legs, but was redirected by kindergarten peers who placed their photovoice journals on the floor for him to see. Upon seeing the pictures, he lifted his head and participated appropriately in the activities.
Academic and IEP objectives	• Beginning academics (preschool and beginning kindergarten level skills). • Sample target skills and objectives include: a. Number identification, sequencing numbers, and number to quantity matching. b. Beginning sight word (receptive) identification. c. Completing three work tasks/increasing attention to tasks.	Photovoice was not used to specifically address any one content area or academic objective. A significant area of growth for Patrick involved social interactions. Similar to Mark, Patrick demonstrated sustained attention with learning materials and joint attention with peers and adults during photovoice.

The Four Barriers of General Education Classrooms

The Council for Exceptional Children (2005) identifies four barriers in general education classrooms that limit student learning.

1. General education classrooms are passive. These environments do not promote active engagement in the learning processes. Teachers talk; students sit and listen.
2. General education classrooms focus on the teacher rather than on students' personal interests or learning style.
3. General education classrooms only engage one type of learner. Students must learn the way the teacher instructs instead of having the curriculum or teaching style adapted to fit the students' needs.
4. General education classrooms do not promote independence and learning. The environment promotes conformity and quiet learning rather than true learning.

From *Universal design for learning: A guide for teachers and education professionals* by Council for Exceptional Children/Pearson/Merrill/Prentice-Hall, 2005.

in the photovoice sessions. Nontext-based activities facilitated successful participation for all children. The activities also used methods described as important to increasing learning and independence for students with autism (Iovanneet et al., 2003; Mesibov et al., 2005). The photovoice sessions used visual materials (i.e., photographs) and visual-communication supports directly linked to the strength of visual perception exhibited by many individuals identified as having autism. The careful structure of the activities gave students clear expectations and information about how to participate. Within the structured, visually oriented tasks, student independence increased. For example, using the structured system, both boys glued their photographs in notebooks with few prompts. As barriers decreased, teacher control or leadership of the lessons also decreased. Once students initiated interactions with each other, I (the teacher) helped extend the interactions by coaching the typically developing peers. (See box, "The Four Barriers of General Education Classrooms.")

Incorporating Student Interests. Incorporating students' interests resulted in increased engagement with others and with learning materials. Students demonstrated many similar interests including family, pets, friends, and playing outdoors. Mark and Patrick indicated their most intense interests by spending more time with certain pictures. For instance, Mark, who typically had difficulty attending to a task for 30 s attended to his photovoice journal for 5 min. He spent most of the time viewing two specific pictures. The pictures, taken at home, incorporated the swing set from Mark's backyard. When Mark shared his notebook with peers, the students identified with his interest in playing outside. The students saw that though Mark did not communicate through words, he shared their interests and enjoyed engaging in similar activities. In addition, during an informal conversation, Mark's mother commented that he carried the book with him at home. She stated, "He just loves that thing. I am going to use real pictures to make more materials."

Implications for Practice

It is important to consider the outcomes of the study at two different levels. First, the themes from the teacher photovoice sessions suggest areas of need in including students with autism. For example, the teachers identified the need for specific professional development opportunities, relationship development beginning from the very first day of school, and understanding the child's influence on the environment as important to promoting positive experiences.

The second phase of the study addressed the needs of children with intensive language and learning deficits. These children previously experienced few self-sustained interactions with peers, adults, or learning materials. Yet, when engaged in the structured photovoice sessions, both children began to initiate and sustain interactions with each other, their peers, and the photovoice materials. The results lead to more questions about both academic and social/personal issues. What are the implications of the data for academic learning and teaching? Could such a process assist these children in learning academic content? What are the implications of the interactions for developing relationships in families affected by autism? How might this process improve quality of life for more individuals affected by autism? How might more teachers begin to engage in research activities to improve their own teaching, thereby improving outcomes for children?

Several specific implications for practice emerged in our work:

- Teacher ownership of every child is essential for children to be valued, contributing members of their community. Ownership develops when teachers view themselves as integral to a child's life. If teachers are truly going to feel comfortable in their ability to serve specific groups of children, a sense of empathy and the value of diversity are imperative.

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- Structuring activities to promote understanding and interest for all students is imperative. Educators must attend to the interests of individual children and allow those interests to drive instruction. Activities must provide clear organization and structure for active engagement to occur.
- Once an activity has sufficient structure to meet the needs of each individual, teachers should fade into the background. The teacher should wait

Strategies That Promote Learning and Engagement for Students With Autism

Structured environments allow children to predict what is happening and what is to come, to understand expectations, and to learn new skills (Heflin & Simpson, 1998; Iovanne et al., 2003). Structured learning environments provide external organization (Mesibov et al., 2005), and focus on the strength of individuals with autism to process visual information (Schopler, 1989).

Visual Support	Description	Reference
Visual schedules	Visual representations of activities and the order in which those activities occur. Visual schedules are similar to "to-do" lists used by many adults.	Copeland & Hughes, 2000 Hodgdon, 1995 MacDuff, Krantz, & McClannahan, (1993) Mesibov et al., 2005
Physical structure	Physical organization informs the child of what activities will take place in each area of the classroom. These structures help support attention and transitioning from one activity to another.	Heflin & Alberto, 2001 Heflin & Simpson, 1998 Iovanne et al., 2003 Mesibov et al., 2005 Panerai, Ferrante, Caputo, & Impellizzeri, 1998
Visually structured learning materials	Such materials clearly indicate the work to be completed, the specific sequence in which to complete the work, and the materials important for task completion.	Mesibov et al., 2005 Scheuermann & Webber, 2002 Schopler & Mesibov, 1995

for teachable moments and then work to create extensions.

Conclusion

Photovoice can be used with teachers in reflection on their practices in inclusion and with students as a strategy to increase membership in the classroom community. For example, the teachers identified the need for specific professional development opportunities, relationship development beginning from the very first day of school, and understanding the child's influence on the environment as important to promoting positive experiences. For students, the photovoice process increased involvement in group activities by removing language barriers, structuring the learning tasks, and incorporating student interests.

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Christi R. Carnahan *(CEC OH Federation), Doctoral Candidate, Special Education Department, University of Cincinnati, Ohio.*

Address correspondence to Christi R. Carnahan, P.O. Box 210002, Cincinnati, OH 45221-21002 (e-mail: carnahc@email.uc.edu).

TEACHING Exceptional Children, *Vol. 39, No. 2, pp. 44–50.*