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# State-of-the-Art Visual Language Makes the Difference at Monarch Center for Autism

Debra Mandell, O.T.R./L., M.A.,  
Melissa Baker, M.S. CCC-SLP, and  
Terence Murphy, M.B.A.

**F**or most children, communication does not need to be explicitly taught.

Rather, it is simply acquired through exposure to a language-rich environment. For children on the autism spectrum, however, a hallmark feature of the disorder is their inability to acquire language in this manner. Social interaction and leisure / play skills, typically acquired over time with exposure to peers, are also difficult for children with autism to acquire. That said, it is well known that most children on the spectrum have stronger visual than auditory processing skills, and as such, can benefit from the use of visual content to enhance communication, help organize daily experiences, and improve school performance. Furthermore, the autism research literature demonstrates evidence that using visuals in the classroom can complement verbal directives and clarify instructional information.

The response of sisters, Ali and Catie, to visual input corroborates these

observations. In 2006, Ali, then three and one-half years old, and Catie, then 18 months old, tragically lost their mother, a victim of domestic violence, at the hands of their father. Within 24 hours, their maternal grandparents were appointed the girls' legal guardians, and literally went from being retired empty nesters to full-time caregivers.

The girls' special needs presented additional challenges. Both Ali and Catie were non-verbal. Ali had been diagnosed with autism at 20 months, and Catie would be diagnosed with pervasive developmental disorder (PDD) at 22 months. According to their grandfather, "Ali was an overly active child. She would awaken between 2:00 and 8:00 a.m., often wanting to play for three or four hours in the middle of the night. She climbed on bookcases; bounced on furniture; and broke chandeliers." Ali also had difficulty with transitions and lacked the verbal skills to request what she wanted, which resulted in frustration and anxiety. Catie disliked transitions; was hesitant to try new things; suffered from obsessions and compulsions; and, like her sister, became easily frustrated by her inability to make requests and express herself.

## The Monarch Program

Fortunately for Ali, Catie, and their grandparents, Monarch Center for Autism was less than four miles away from their home in a suburb of Cleveland, Ohio. The center, which was founded in 2000, offers a comprehensive array of programs and services

for individuals with autism spectrum disorders, from ages three to 22.

Monarch's program derived from a partnership with Harvard Medical School and Children's Hospital Boston, and offers an evidenced-based, visual language teaching method aimed at leveraging the strong visual processing abilities of children with autism so as to support communication, comprehension, language development, social skills, and academic achievement. Concept-driven to ensure that learning is generalized to multiple contexts, including school, home, and community, the program is predicated on the systematic and individualized introduction of language concepts accompanied by visual supports, to help children with autism develop modes of communication. These modes – *spoken, visual, and/or written* – assist in alleviating frustration, reducing maladaptive behavior, building confidence, and enriching the individual's quality of life.

The visual language approach used at the school has six critical elements that have had a positive impact on both Ali and Catie. These include:

## Assessment

A team of professionals, including speech-language pathologists, occupational therapists, and intervention specialists, conducted initial and dynamic evaluations of Ali and Catie to assess their visual and spoken language abilities, as well as other developmental



Catie, playing a game in her classroom



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domains. Extending from basic picture recognition, to more sophisticated understanding of idioms and analogies, the assessments helped the team to determine entry-level interventions for the girls, with the goal of moving them toward more complex forms of communication over time.

### Natural Language Curriculum

In compliance with Ohio state curricular standards, Monarch's approach takes advantage of "teachable moments" in the natural environment in order to embed language learning in a meaningful context to aid understanding and expression.

Through the repeated use of spoken language accompanied by visual supports, Ali learned how to function and take responsibility for herself in the classroom and beyond. She mastered the ability to walk in a line down the hall with other students; carry her own things; and independently perform tasks at her locker. Catie has learned to put on her outer wear independently; take her sister's hand; and call for her grandparents, when appropriate.

### Content Area Curriculum

As students become more competent in their understanding and use of language, they are better able to manage the demands of a comprehensive educational curriculum, which includes math, social studies, science, language arts, and reading instruction.

Catie, now four years old, is learning math skills through an interactive and engaging program displayed on the SmartBoard. In addition to the academic skills she's acquiring, she is also working on the social skill of taking turns with peers, and the life skill of learning how to wait patiently for something to occur. Through the

support of electronic and paper-based visuals, Ali, now six years old, is learning how to read three- to five-word sentences; perform single-digit addition; and identify coins and their values.

### Outcomes Data

Our unique data collection system drives instruction by measuring student performance and program strength through the parameters of independence, accuracy, participation, and behavior. Ali's and Catie's teachers collect data weekly and share performance and progress updates with their grandparents via the home-school daily communication log.

### Visual Supports

Arguably, the most unique aspect of the approach, derived from collaboration with the Autism Language Program at Children's Hospital Boston, is a conceptual framework for the use of visuals which is based on clinical outcomes. This framework is organized around three primary constructs: *Visual Instruction* (adapting instruction so it is presented visually); *Visual Expression* (using visuals to facilitate expressive communication); and *Visual Organization* (using visuals to organize activities and daily schedules).

Ali relies on a daily visual schedule comprised of words with corresponding pictures that help to facilitate reading comprehension. Not only does this schedule organize and lay out her daily routine, it also enables her to anticipate events, eliminating the element of surprise that can cause anxiety in children with ASD. In addition, the visual

schedule also promotes independence and provides a level of comfort for Ali.

Catie participates in daily circle time activities with her classmates. Through the use of myriad visuals, including choice boards, videos, and interactive games displayed on the SmartBoard, Catie is learning multiple concepts associated with time, sequential order, categories, and literacy.

### Technology

Computers, educational software, SmartBoards, video modeling, augmentative communication devices, and other forms of technology are in plentiful supply throughout the school day. These tools—along with VizZle software, which was custom-developed at Monarch—provide an engaging way of reinforcing concepts by taking advantage of the attraction to screen-based media, visuals, and repetition that children with autism demonstrate.

While watching a customized video model of a car wash (complete with the sounds and words associated with the actions), Ali was able to imitate the actions depicted using a toy car. Later, she performed the actions (with appropriate sounds) independent of the video. We have found video modeling to be

Ali, working on an academic task





an effective strategy for teaching new concepts and language to our students.

### Necessity: The Mother of Invention

Since visual supports are incorporated into every aspect of school life, the task of searching for images, printing, cutting, and laminating them is both time-consuming and labor-intensive. Our quest to simplify this procedure led us, in 2005, to form Monarch Teaching Technologies (now an affiliate of the school). Its task was to develop easy-to-use, engaging visual language supports accessible not only to Monarch staff, but to teachers and parents everywhere.

The result is *VizZle*—a web-based subscription software accessible to anybody with an Internet connection (available at [www.monarchtt.com](http://www.monarchtt.com)). Fortunately for Ali and Catie, *VizZle* was developed and tested at Monarch for more than four years before its general release, so the girls have benefited from extensive exposure to numerous individualized, interactive visual lessons, as well as more traditional visual behavioral supports. According to Mary Kall, a preschool teacher at the school, “Like most children with autism, Ali and Catie

Catie, working on a project



have an affinity for computer- and video-based activities. *VizZle* makes learning fun and engaging, and it provides content that helps the girls meet specific IEP objectives.”

From electronic medium to paper-based supports, visuals are ubiquitous at Monarch. They are applied within a structured language system rather than used as isolated icons, which enable them to effectively enhance communication; organize daily experiences; improve school performance; and reduce maladaptive behavior. They have given students like Ali and Catie a voice. Once shrouded in frustration over their inability to communicate, Ali recently performed *The Very Hungry Caterpillar* with classmates. Dressed in butterfly wings, she waited patiently, followed

directions, and participated. Today, when Catie needs reassurance, she is able to independently tap her teacher on the shoulder and say, “Miss Mary, hug?”

### A Final Word

Despite the tragedy and adversity life has dealt them, Ali and Catie are making great strides. According to their grandmother, “We are so grateful to our “Monarch Family” for identifying their potential and helping them achieve. They are learning to communicate their wants and needs, and comment on their thoughts and feelings, which has decreased their levels of frustration. Raising Ali and Catie is an adventure, but they are such a blessing. They don’t just enrich our lives, they *ARE* our lives. They fulfill a tremendous void and give us a reason to persevere.”

## Bios



**Debra Mandell, O.T.R./L., M.A.**, is the Director of Monarch School, a chartered non-public school for children ages 3-22 with autism spectrum disorders. She co-founded Monarch’s partnership with Harvard Medical School and Children’s Hospital

Boston, resulting in the development of a visual language teaching approach and the award winning visual language software, *VizZle*. She is currently collaborating with Rainbow Babies & Children’s Hospital to form a new autism center that will combine research, clinical assessment, intervention services, community outreach, and training. For more information about Monarch Center for Autism, please visit [bellefairejcb.org/monarch](http://bellefairejcb.org/monarch).



**Melissa Baker, M.S. CCC-SLP**, is a speech language pathologist with eleven years of experience in the field of autism spectrum disorders. She currently serves as the speech therapy department

supervisor at Monarch School. In this role, Ms. Baker collaborates with developers to create leading-edge software, including *VizZle*, for students with ASD. She also plays an integral role in Monarch’s partnership with Harvard Medical School and Children’s Hospital Boston. For more information about Monarch Center for Autism, please visit [bellefairejcb.org/monarch](http://bellefairejcb.org/monarch).



**Terence Murphy** is the CEO and co-founder of Monarch Teaching Technologies (MTT). MTT develops technology to improve the learning experience of children with autism and other

language disorders, including *VizZle*, the award-winning web-based visual learning software. Mr. Murphy serves on several advisory boards, and is involved in NIH research in the autism field. He has co-authored a book, written numerous articles for publications, and holds a U.S. Patent for software. For more information about *VizZle*, please visit [monarchtt.com](http://monarchtt.com).



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