



Using Visual Supports for Students With Autism in Physical Education

Jaekwon Fittipaldi-Wert & Claire M. Mowling

To cite this article: Jaekwon Fittipaldi-Wert & Claire M. Mowling (2009) Using Visual Supports for Students With Autism in Physical Education, *Journal of Physical Education, Recreation & Dance*, 80:2, 39-43, DOI: [10.1080/07303084.2009.10598281](https://doi.org/10.1080/07303084.2009.10598281)

To link to this article: <https://doi.org/10.1080/07303084.2009.10598281>



Published online: 26 Jan 2013.



Submit your article to this journal [↗](#)



Article views: 2343



Citing articles: 13 [View citing articles](#) [↗](#)

Using Visual Supports for Students with Autism in Physical Education

JEANINE FITTIPALDI-WERT

CLAIRE M. MOWLING

This comparatively new communication technique can help students with autism to succeed in physical education.

Imagine yourself teaching a physical education class. In the middle of your explanation of an activity, a student starts running around, flailing his or her arms, and making a screeching sound. You approach the student and begin to explain that the behavior is inappropriate; however, the student begins to rock back and forth and continues to make a screeching sound.

Now imagine yourself as a student standing in the gym. Your clothes are itchy and heavy on your body; you hear children talking, yelling, their voices echoing; basketballs are bouncing; fluorescent lights are buzzing; and children's sneakers are screeching on the gymnasium floor. Simultaneously, you see basketballs moving in the air, cones and equipment scattered on the floor, and children moving all around you. Welcome to a physical education class for a student with autism.

Autism. This one word has a tremendous impact on parents, teachers, and especially on the individual with autism. Autism is the fastest growing developmental disability; every 21 minutes another child is diagnosed with it (Cure Autism Now, 2006). Autism is a puzzling disability in that the etiology is unknown and it affects each individual differently and in varying degrees. Individuals with autism live in an unpredictable world; they are not sure of what comes next in their daily life, nor do they have an understanding of what to do or when to do it. Due to deficits in communication, students with autism experience anxiety and confusion, which then causes withdrawal and disruptive and self-stimulatory behaviors (Collier & Reid, 2003; Jones & Block, 2006; Mesibov & Shea, 1996).

The prevalence of autism spectrum disorder (ASD) is one in 150, making autism the fastest growing developmental disability in the United States (Centers for Disease Control and Prevention, 2007). Due to the laws supporting students with disabilities and the prevalence of autism, it is extremely likely that most general physical educators will have to teach a student with autism sometime during their career. Teachers can create a positive educational environment that will facilitate learning by having an understanding of autism and of the characteristics associated with children with autism. Those characteristics include deficits in social interaction and communication, as well as restrictive, repetitive, and stereotypical behaviors (American Psychiatric Association [APA], 2000; Mesibov & Shea, 1996). See table 1 for specific characteristics that affect students with autism in the physical education environment.

The physical education environment is constantly changing with regard to class organization (i.e., partners, small groups, or large groups), the task itself, or the equipment being used. For a student with autism, this environment can be absolutely chaotic (Houston-Wilson & Lieberman, 2003), causing withdrawal and disruptive or self-stimulatory behaviors (APA, 2000; Collier & Reid, 2003; Jones & Block, 2006; Mesibov & Shea, 1996). Due to deficits in communication, students with autism have trouble understanding what to do and when to do it, which causes anxiety and confusion.

Effective communication is critical in teaching. Physical educators rely on verbal communication to explain and demonstrate a new task and to provide students

Table 1. Challenges in Physical Education for Students with Autism

Physical Education	Students with Autism
Incorporates cooperative and partner activities	Demonstrate an absence or minimal cooperative play
Consistently changes with regard to class organization, tasks given, and equipment used	Desire sameness
Relies on the use of verbal instruction and feedback	Have difficulty comprehending spoken language. Some students may be nonverbal or have minimal speech and are visual learners.
Is in an environment with excessive noises due to the acoustics and buzzing from fluorescent lights in the gymnasium	Display hypersensitivity to sounds and light, which can cause self-stimulatory and disruptive behaviors

Modified from Fittipaldi-Wert (2007)

with feedback. In turn, physical educators rely on students' verbal communication in order to provide assistance with a task or activity. However, students with autism may be nonverbal or have minimal speech, and they may have difficulty comprehending the spoken language. Therefore, verbal explanation may not be the most productive way of conveying information to a student with autism (Mesibov & Shea, 1996).

Individuals with autism have expressed that they process visual information more efficiently than auditory input (Grandin, 1995). This article therefore focuses on visual teaching strategies that support the learning styles of students with autism in an inclusive physical education class. The specific visual supports discussed are the Picture Exchange Communication System (PECS), activity schedules, task cards, visual warning devices, and boundaries.

It must be noted, however, that no two students with autism are the same. Although research has indicated that visual supports help to increase social interactions, improve skill development, and increase on-task behaviors, the particular visual supports that are used must meet the individual needs of the student with autism (Dettmer, Simpson, Myles, & Ganz, 2000; Fittipaldi-Wert, 2007; Krantz & McClannahan, 1993). Instead of using just one type of visual support, it may be possible to follow a progression when implementing visual supports with some students. For example, the teacher could begin by presenting the student with autism an actual picture taken of an object to be manipulated or of the student performing a specific skill, and then progress to a PECS card with the corresponding written description, and finally to a card with only a written description of an object or skill.

Visual Supports

Visual supports provide students with autism with clear expectations, give them a predictable schedule of events, promote independent transitions, and indicate changes that may occur throughout a day (Morrison, Sainato, BenChaaban, & Endo, 2002). Visual supports create predictability, order, and consistency, which are what students with autism need and want (Simpson & Myles, 1996). Pictures, line drawings,

visual activity schedules, spots and lines on the floor, timers, written schedules, and specific boundaries are all examples of useful visual supports (Blubaugh & Kohlmann, 2006; Rao & Gagie, 2006).

Picture Exchange Communication System

The Picture Exchange Communication System (PECS) is a visual communication tool for educators and their students with autism. It consists of a card with black-and-white or color drawings that depict an object or skill and also has the corresponding description written above the object or skill (Charlop-Christy, Carpenter, LeBlanc, & Kellet, 2002). For example, a PECS card with bowling pins would represent bowling. The PECS cards are created by a computer program (BoardmakerPlus), which is predominately used by special education teachers. It can be beneficial for physical educators to collaborate with the special education teachers in creating resources, routines, goals, and objectives for the students with autism. The physical educator should carry a PECS ring that is attached to a lanyard and that holds PECS cards with line drawings of physical education activities and commands such as sit, stand, check schedule, throw, and catch (figure 1).

Figure 1. PECS Ring



Activity Schedule

The PECS cards and pictures can be used to create activity schedules. Through collaboration with the classroom or special education teacher, a routine can be devised before the student with autism enters the gymnasium (Simpson, de Boer-Ott, & Smith-Myles, 2003). For example, the classroom or special education teacher could have a schedule board in class that advises the student of the daily activities. When it is time for physical education, the student takes the picture of the physical education teacher, or a symbol that represents physical education, off the schedule board and hands it to the physical educator as he or she enters the gymnasium. The student would then proceed to check the activity schedule in physical education (Houston-Wilson, 2005).

The activity schedule for physical education should be created by using a white board and Velcro in addition to PECS cards or pictures that depict the class activities. This allows the student to pull the activity card off before performing the task. The student's name should be at the top of the activity schedule, and the activities depicted by pictures or PECS cards should be attached to the board in sequential order. An envelope at the bottom will allow the student to put away each activity card before performing the task (figure 2).

Depending on the student's abilities, the physical education schedule board can indicate the activities through pictures (which may include the student performing the activity), line drawings, words, or a combination of words and pictures (Quill, 1995). When creating pictures, it is important to be aware that a child with autism may have difficulty screening out irrelevant information, so each picture should include only one item (Houston-Wilson, 2005).

Task Cards

The PECS cards and pictures can also be used to create task cards. Creating task cards (figures 3, 4, and 5) that depict a specific exercise or task that is to be completed can also provide additional visual supports and structure (e.g., Frisbee catch, bowling, jumping jacks).

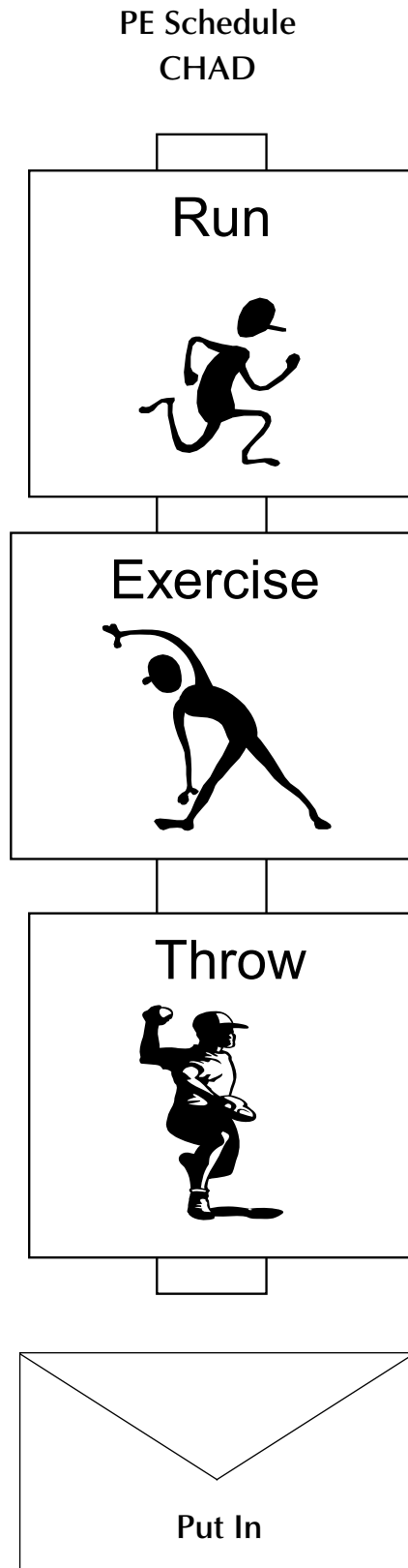
Visual Warning Devices

Individuals with autism have difficulty comprehending spoken language, systems, orderly relationships, and time within the constantly changing physical education environment. Therefore, it is important to develop a routine that will let the student know that an activity is ending. This can be accomplished through the use of visual warning devices such as a timer or stop watch (Dettmer et al., 2000). This provides the student with autism a visual cue that there is no time remaining and that he or she needs to check the schedule for the next activity. If there is down time in physical education, an area can be marked with the student's name or a picture of the student that informs the student where to wait.

Boundaries

Boundaries designate the exact area in which a task is to be performed, while also promoting independence for a

Figure 2. Activity Schedule



student with autism (Houston-Wilson & Lieberman, 2003; Schultheis, Boswell, & Becker, 2000). Boundaries can be in the form of cones, floor tape, or higher boundaries that block the student's view of other activities to minimize distractions (Houston-Wilson & Lieberman, 2003; Schultheis et

Figure 3. Frisbee Catch



Figure 4. Bowling Task Card

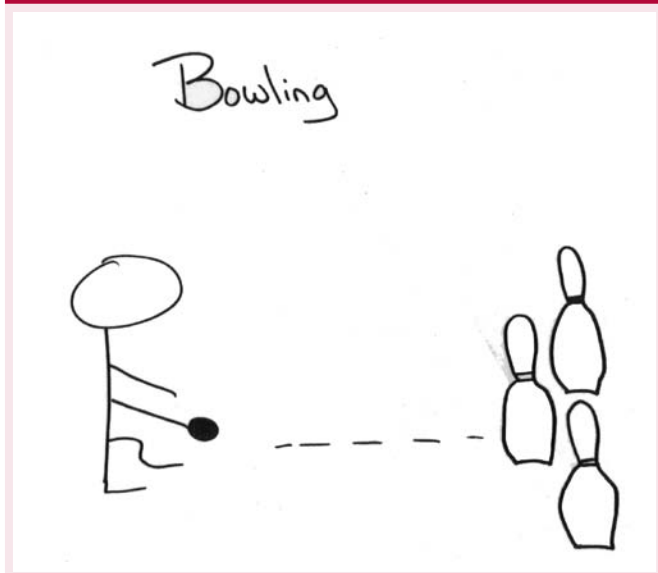
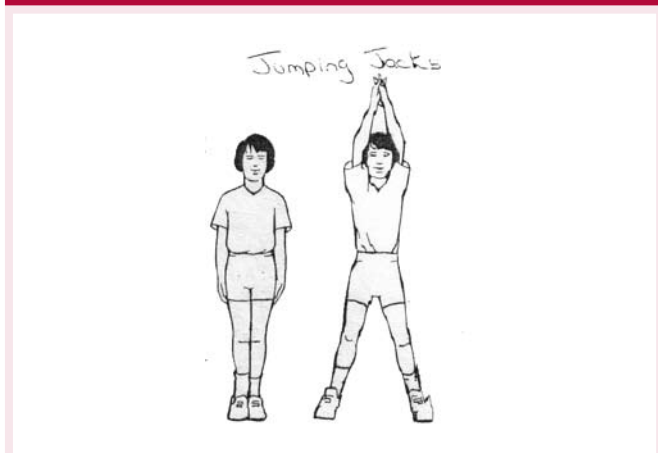


Figure 5. Jumping Jacks Task Card



al., 2000). The benefits of boundaries have been observed by the Treatment and Education of Autistic and Related Communications-Handicapped Children recreational structure program (Schultheis et al., 2000). Observations in this program indicated that children with autism identified and remembered activities that had been clearly marked and displayed less stereotypical behaviors. Also, the boundaries used were 4 feet high, which decreased the amount of external stimuli.

Conclusion

Accessible, high-quality physical education programs can provide students with and without disabilities the opportunities to develop and improve their social skills, physical fitness, interactions with peers, cooperative learning, and personal and social responsibilities, while also exposing them to lifelong activities (Staveren & Dale, 2004). Having an understanding of the characteristics associated with autism will help physical educators to provide appropriate modifications and adaptations that will facilitate a successful environment for students with autism and their peers. Visual supports help to provide a predictable and organized environment by appealing to the processing strengths of students with autism or of any student who processes visual information more effectively. There is no single best teaching method when teaching students with autism. However, it is beneficial to focus on what is known about students with autism: they process visual information more effectively than auditory information.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of developmental disorders* (4th ed., Text Revision). Washington, DC: Author.
- Blubaugh, N., & Kohlmann, J. (2006). TEACCH model and children with autism. *Teaching Elementary Physical Education, 17*(6), 16-19.
- Centers for Disease Control and Prevention. (2007). *Prevalence of the autism spectrum disorders in multiple areas of the United States: Surveillance years 2000 and 2002*. Retrieved February 10, 2007, from <http://www.cdc.gov/ncbddd/dd/addmprevalence.htm>.
- Charlop-Christy, M. H., Carpenter, M., LeBlanc, L. A., & Kellet, K. (2002). Using the picture exchange communication system (PECS) with children with autism: Assessment of PECS acquisition, speech, social-communicative behavior, and problem behavior. *Journal of Applied Behavior Analysis, 33*(3), 213-233.
- Collier, D., & Reid, G. (2003). The autism spectrum disorders. *Palaestra, 19*(3), 36-46.
- Cure Autism Now. (2006). *Autism resources: FAQs about autism*. Retrieved February 10, 2007, from http://www.cureautismnow.org/site/c.bhLOK2PILuF/b.1311643/k.98D1/FAQs_About_Autism.htm.
- Dettmer, S., Simpson, R., Myles, B., & Gantz, J. (2000). The use of visual supports to facilitate transition of students with autism. *Focus on Autism and Other Developmental Disabilities, 15*(3), 163-169.
- Fittipaldi-Wert, J. (2007). *The use of visual supports for students with autism in inclusive physical education*. Unpublished doctoral dissertation, Auburn University, Alabama.

- Grandin, T. (1995). *Thinking in pictures: And other reports from my life with autism*. New York: Doubleday.
- Houston-Wilson, C. (2005). Pervasive developmental disorders. In J. P. Winnick (Ed.), *Adapted physical education and sport* (4th ed., pp. 173-188). Champaign, IL: Human Kinetics.
- Houston-Wilson, C., & Lieberman, L. J. (2003). Strategies for teaching students with autism in physical education. *Journal of Physical Education, Recreation & Dance, 74*(4), 40-44.
- Jones, K. J., & Block, M. E. (2006). Including an autistic middle school child in general physical education: A case study. *Strategies, 19*(4), 13-16.
- Krantz, P. J., & McClannahan, L. E. (1993). Teaching children with autism to initiate to peers: Effects of a script-fading procedure. *Journal of Applied Behavior Analysis, 26*(1), 121-132.
- Mesibov, G. B., & Shea, V. (1996). Full inclusion and students with autism. *Journal of Autism and Developmental Disorders, 26*(3), 337-346.
- Morrison, R. S., Sainato, D. M., BenChaaban, D., & Endo, S. (2002). Increasing play skills of children with autism using activity schedules and correspondence training. *Journal of Early Intervention, 25*, 58-72.
- Quill, K. A. (1995). Visually cued instruction for children with autism and pervasive developmental disorders. *Focus on Autistic Behavior, 11*, 10-22.
- Rao, S. M., & Gagie, B. (2006). Learning through seeing and doing: Visual supports for children with autism. *Teaching Exceptional Children, 38*(6), 26-33.
- Schultheis, S. F., Boswell, B. B., & Decker, J. (2000). Successful physical activity programming for students with autism. *Focus on Autism & Other Developmental Disabilities, 15*(3), 159-162.
- Simpson, R. L., de Boer-Ott, S. R., & Smith-Myles, B. (2003). Inclusion of learners with autism spectrum disorders in general education settings. *Topics in Language Disorders, 23*(2), 116-133.
- Simpson, R. L., & Myles, B. S. (1996). The general education collaboration model: A model for successful mainstreaming. *Focus on Exceptional Children, 23*(4), 1-10.
- Staveren, T. V., & Dale, D. (2004). Childhood obesity problems and solutions. *Journal of Physical Education, Recreation & Dance, 75*(7), 44-49.
- Hall, T. J., & McCullick, B. A. (2002). Discover, design, and invent: Divergent production. *Teaching Elementary Physical Education, 13*, 22-24.
- Hargreaves, J. (1982). *Sport, culture, and ideology*. London & Boston: Routledge & Kegan Paul.
- Kozub, F. M., & Kozub, M. L. (2004). Teaching combative sports through tactics. *Journal of Physical Education, Recreation & Dance, 75*(8), 16-21.
- Lakes, K. D., & Hoyt, W. T. (2004). Promoting self-regulation through school-based martial arts training. *Applied Developmental Psychology, 25*, 283-302.
- Law, D. R. (2004). A choice theory perspective on children's Taekwondo. *International Journal of Reality Therapy, 24*, 13-18.
- Lee, K. M. (2001). *Taekwondo: Philosophy and culture*. Elizabeth, NJ: Hollym International Corp.
- McCullick, B. A., & Byra, M. (2002). Spectrum teaching styles and the National Standards for physical education: Introduction. *Teaching Elementary Physical Education, 13*, 6-7.
- Melhim, A. F. (2001). Aerobic and anaerobic power responses to the practice of taekwon-do. *British Journal of Sports Medicine, 35*, 231-234.
- Michaelson, M. T. (2000). Should martial arts be taught in physical education classes [Letter]? *Journal of Physical Education, Recreation & Dance, 71*(9), 12-14.
- Mosston, M., & Ashworth, S. (2002). *Teaching physical education*. San Francisco: Benjamin Cummings.
- National Association for Sport and Physical Education. (2004). *Moving into the future: National standards for physical education* (2nd ed.). Reston, VA: Author.
- Pieter, W., Taaffe, D., & Heijmans, J. (1990). Heart rate response to Taekwon-Do forms and technique combination. *Journal of Sports Medicine and Physical Fitness, 30*, 97-102.
- Siedentop, D., Hastie, P. A., & van der Mars, H. (2004). *Complete guide to sport education*. Champaign, IL: Human Kinetics.
- Skidmore, M. J. (1991). Oriental contribution to western popular culture: The martial arts. *Journal of Popular Culture, 25*(1), 129-148.
- Tedeschi, M. (2003). *Taekwondo*. Trumbull, CT: Weatherhill.
- Tomlinson, A. (2005). *Sport and leisure cultures*. Minneapolis, MN: University of Minnesota Press.
- Toskovic, N. N., Blessing, D., & Williford, H. N. (2002). The effect of experience and gender on cardiovascular and metabolic responses with dynamic tae kwon do exercise. *Journal of Strength and Conditioning Research, 16*, 278-285.
- Violan, M. A., Small, E. W., Zetaruk, M. N., & Micheli, L. J. (1997). The effect of karate training on flexibility, muscle strength, and balance in 8- to 13-year-old boys. *Pediatric Exercise Science, 9*, 55-64.
- Weiser, M., Kutz, I., Kutz, S. J., & Weiser, D. (1995). Psychotherapeutic aspects of the martial arts. *American Journal of Psychotherapy, 49*, 118-127.
- Winkle, J. M., & Ozmun, J. C. (2003). Martial arts: An exciting addition to the physical education curriculum. *Journal of Physical Education, Recreation & Dance, 74*(4), 29-35.
-
- Jaekwon Na (jjsk824@uga.edu) is a doctoral student in the Department of Kinesiology at the University of Georgia, in Athens, GA 30602.*

Na

Continued from page 38

Ashworth (Eds.), *Teaching physical Education* (5th ed., pp. 318-335). San Francisco: Benjamin Cummings.

Falk, B., & Mor, G. (1996). The effects of resistance and martial arts training in 6- to 8-year old boys. *Pediatric Exercise Science, 8*, 48-56.

Focht, B. C., Bouchard, L. J., & Murphey, M. (2000). Influence of martial arts training on the perception of experimentally induced pressure pain and selected psychological responses. *Journal of Sport Behavior, 23*, 232-244.