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Using Educational Software to Help Autistic Children

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Autism is a disorder that affects normal development. It is a "spectrum disorder" because its impact on development ranges from mild to severe. The areas of development autism affects most are social interaction, verbal and nonverbal communication, and behavior with others and with objects.

Just like any other child, an autistic child learns in his/her own way. You may notice that he/she has preferences for learning, such as working on the computer. Children often find computer-based programs to be engaging—they receive visual instruction when they see images on the screen, and they receive auditory instruction when they hear different sounds and speech.

Educational software is one way to help autistic children learn and build upon a variety of skills. These interactive computer based programs can provide structure within a specific format and at different levels within that format, feedback for correct/incorrect responses, and motivation from colorful, moving images and various sounds effects.

Educational Software

Educational software refers to computer programs that target certain skills and concepts that children need for success inside and outside the classroom. The programs have built-in words and images for a variety of learning tasks. For example, these tasks can include skills such as following directions (e.g., Click on the blue bunny.), selecting a certain item (e.g., Which house is larger?), and repeating words aloud (e.g., "Say, This is my happy face.").

Many educational software programs allow you to track data and progress. Then, you are able to see areas where the child has success and areas where he/she needs additional/ different instruction. Often times, you can print the data in a chart. As well, some programs offer pre- and post-tests which provide a baseline (starting point) and an evaluation (ending point).
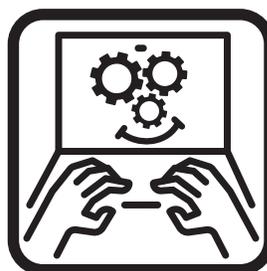

Research on Educational Software and Autistic Children

Research-based teaching techniques and tools are important for helping autistic children. There are several studies about autistic children and what types of instruction may benefit them. More studies need to confirm these findings as well as define new instructional methods. The following are some of the research findings thus far:

According to a review from the Association for Science in Autism Treatment (n.d., Research Summary, ¶ 2) of five scientific studies on "computer-assisted instruction" (CIA), such instruction may help children with autism learn:

- **Vocabulary**
- **Symbols** (recognition)
- **Written words** (identification)
- **Emotions** (naming and predicting)

A review in Focus on Autism and Other Developmental Disabilities of 24 studies (dating from 1975 to April 2001) of autism intervention programs shows that effective interventions with the "most positive outcomes":

- **Target multiple variables.**
- **Extend over a long duration.**
- **Involve parents.**

(Levy, S., Kim, A.-H., et. al., 2006, p. 55)

The review also mentions one study that states: "a study comparing computer program intervention to teacher-directed intervention found significantly increased vocabulary, attention, and motivation in children receiving computer program intervention" (p. 58).

Another review of studies in Real Life, Real Progress for Children with Autism Spectrum Disorders focuses on computer instruction for autism and states that such instruction may provide:

- **"More education and treatment options."**
- **"Effectiveness."**
- **"Increased accessibility."**
- **"Improved data collection."**
- **"Cost savings."**
- **"Greater motivation for the child."**
- **"At least some general-ization off the computer."**

(Whalen, Massaro, & Franke, n.d., p. 19, ¶ 3).

Benefits of Educational Software

Based on the aforementioned research, as well as behavioral observations from parents and educators, there are many possible benefits of educational software programs for autistic children. The children may:

- **Find the programs to be motivating.**
- **Have the opportunity to practice skills repeatedly, which helps build concepts and knowledge into long-term memory.**
- **Enjoy seeing moving objects with sound effects.**
- **Receive an instant gratification when they give the correct answer (e.g., a 'Good Job' image with audio).**
- **Work within a structured environment and setup within the program, so they know what to expect.**
- **Gain exposure to a variety of words and pictures. Incidental learning (learning that occurs naturally without direct instruction) may occur.**
- **Experience multiple levels of an activity and learn that several steps may be part of one activity.**
- **Get reinforcement for ideas and concepts taught in class.**
- **See appropriate behavior in a fun format. They can then imitate such behavior.**

Keep in mind that autistic children have individual rates of learning and retention. What works for one child may not work for another. As well, you may need to limit time on a computer program if the child fixates on the computer or withdraws from everyday social situations to go to the computer.

Resources:

Association for Science in Autism Treatment. (n.d.). Computer-assisted instruction. Retrieved August 26, 2009, from http://www.asatonline.org/resources/procedures/computer.htm

Levy, S., Kim, A.-H., et. al. (2006). Interventions for young children with autism: A synthesis of the literature. Focus on Autism and Other Developmental Disabilities, 21(1), 55–62.
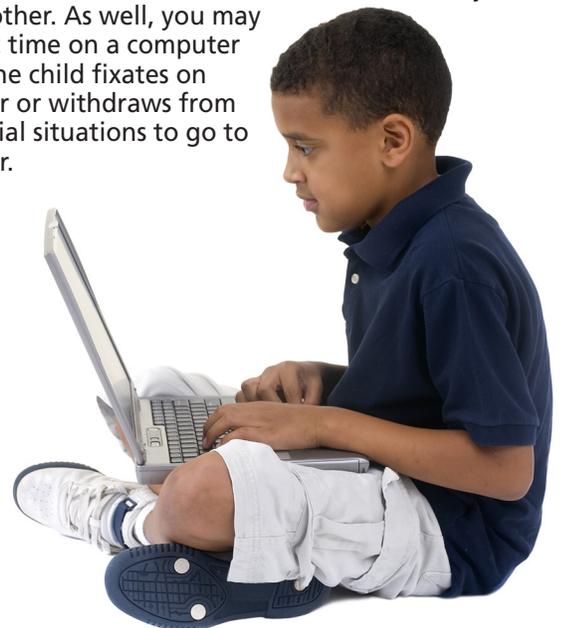
Whalen, C., Massaro, D., & Franke, L. (n.d.). Generalization in computer-assisted intervention for children with autism spectrum disorders. Retrieved August 31, 2009, from http://psl.ucsc.edu/pdf/Whalen_Ch06.pdf

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