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Research Foundations of the DT Trainer

The Discrete Trial (DT) Trainer was created incorporating behavioral methods including:

1. Positional prompting and prompt fading

2. Student specific reinforcement and reinforcement fading

3. Training phases of introduction, randomization, and maintenance

4. Discrete trials incorporating data collection on the student responses

5. Flexibility to overcome student specific learning issues

The software is an emulation of the child working at a table across from a teacher. Positional prompting is used to aid the child's learning. The software provides a wide variety of reinforcement to allow the teacher to select what is reinforcing for the individual child. Using child specific reinforcement is a key part of teaching difficult to educate children.

As is shown by the following research references, the methods incorporated in the DT Trainer are based on decades of research in Applied Behavioral Analysis (ABA). ABA is the science of teaching or altering the behavior of people or other animals. The science goes back to B. F. Skinner's work decades ago. ABA has been proven to be effective across many human and animal behaviors, and also with learning disabilities including autism. The Discrete Trial is a short measurable task for the child and involves a command and other stimuli, the student's response, and some consequence for the response (behavior).

There is vast research supporting ABA. Eric V. Larsson, Ph.D., L.P. compiled an extensive list of research supporting ABA methods with respect to autism and other learning disabilities. The research ranges from the 1960s to the 2000s and is mostly for human intervention but there are also some studies on computer aided methods (See Dr. Larsson's ABA Research List).

Based on the evidence, the US Surgeon General recommends ABA for children with autism (See Excerpts from US Surgeon General's Recommendation for Treatment of Autism).

The ability of learning disabled students to learn on computers is well established. There are extensive research studies on the effectiveness of computer aided teaching of children with learning disabilities including autism. Some studies even show a preference of learning disabled children for the computer (See Computer Research with LD and Autistic Children). Robert Stromer, Ph.D., a behavioral psychologist, has performed over 12 years of research on computer based teaching of children with autism (See Dr. Stomer's Research). The Center for Applied Research in Educational Technology (CARET) determined that (computer and other) technology "can be more effective than regular group instruction for educationally handicapped students" (See Excerpts from Selected CARET References).

The DT Trainer itself has been reviewed by the behavioral psychology community.

Ashton, T. M. (2001). The application of ABA to technology: The Discrete Trial Trainer. Journal of Special Education Technology, 16, 41-42.

Butter, E. M., & Mulick, J. A. (2001). ABA and the computer: A review of the Discrete Trial Trainer. Behavioral Interventions, 16, 287-291.

Additionally, the DT Trainer is in use in ABA centers of excellence including Alpine Learning Group, Eden II, and Bancroft. Numerous school districts also use the product. These centers and school districts have conducted internal evaluations to determine the effectiveness of the DT Trainer with their students. And even though the DT Trainer was not created as a research tool, it has also been used in the RUPPS study across 5 universities to help determine the effectiveness of drugs on the learning abilities of children with autism.

The DT Trainer is based on decades of evolving ABA methods and is the logical next step for leveraging inexpensive computer technology to assist in the teaching of children with autism and other learning disabilities.